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ABSTRACT

This monograph brings together staff papers relating to the national guidelines for health planning called for by Section 1501 of the National Health Planning and Resources Development Act of 1974 (Public Law 93-641). The papers consider relationships between local plans and programs and ten health policies designated for priority consideration: (1) primary care for the underserved; (2) coordination of health services; (3) medical group practices; (4) physician assistants; (5) sharing of support services; (6) improving quality; (7) appropriate levels of care; (8) disease prevention; (9) uniform reporting systems; and (10) health education. Each paper is preceded by a brief abstract. (MM).

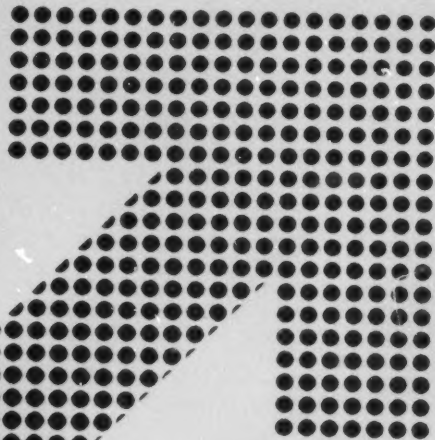
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PAPERS
ON THE
NATIONAL HEALTH
GUIDELINES:

**The
Priorities
of
Section
1502**

January 1977



U.S. DEPARTMENT OF HEALTH,
EDUCATION & WELFARE
NATIONAL INSTITUTE OF
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Public Health Service
Health Resources Administration

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Health Resources Administration

DHEW Publication No. (HRA) 77-641

This monograph brings together staff papers relating to the National Guidelines for Health Planning, called for by Section 1501 of the National Health Planning and Resources Development Act of 1974 (Public Law 93-641).

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Preface

There are ten health policies listed in Section 1502 of the National Health Planning and Resources Development Act which under the law deserve "priority consideration" in health planning and resources development. They are to be used by the National Council on Health Planning and Development and the Secretary of Health, Education, and Welfare in formulating national health goals, and by Health System's Agencies and State Health Planning and Development Agencies in developing and carrying out their plans and programs.

The idea of priorities and to a great extent the actual wording of Section 1502 go back to the earliest history of the health planning legislation, as it was introduced in the House of Representatives in December, 1973. The object then and now was to identify policies which Congress believes are especially important for improving the health system, but to do this in such a way as to give health planners the widest possible latitude in adapting them to the particular needs and situation of their areas.

None of the ten priorities are new to the health care system or to Federal legislation.

Priority 1 addresses the need to provide primary health care to the underserved, especially those living in rural and economically depressed areas. Congress has authorized many programs for this purpose over the years, among them community health centers, migrant and Indian health programs, mental health centers and the National Health Service Corps.

Priority 2 concerns itself with multi-institutional systems for coordinating or consolidating health services and Priority 7 with developing appropriate levels of care within geographical areas. Both of these were objectives of the Regional Medical Programs and the Hill-Burton Program.

Priority 3 calls for the development of medical group practices and other organized systems of health care. This is the concern of the Health Maintenance Organization Act of 1973 and other legislation as well, including the Health Revenue Sharing Act of 1975.

Priority 4 calls for the training and increased utilization of physician assistants and especially, nurse clinicians. Much Federal effort and legislation during the last decade supports this; the most recent enactment is the Health Professionals Educational Assistance Act of 1976.

Priority 5 encourages the development of multi-institutional arrange-

ments for shared support services. Such undertakings are being studied and aided by the National Center for Health Services Research.

Priority 6 calls for the promotion of activities to achieve needed improvements in the quality of health services, including needs identified by the review activities of Professional Standards Review Organizations. PSROs were created by the Social Security Amendments of 1972.

Priority 8 is concerned with disease prevention, nutrition, and the environment. These have been public health and Congressional concerns for many years.

Priority 9 calls for the adoption of uniform cost accounting, simplified reimbursement and utilization reporting services. This is covered within the National Health Planning and Resources Development Act itself, in Section 1533, and also in the Social Security Amendments of 1972.

And finally, Priority 10 calls for the development of more effective methods of health education and promotion. This was a purpose of the National Consumer Health Information and Health Promotion Act of 1976.

Although the Section 1502 priorities appear elsewhere in Federal programs and Federal legislation, their presence in Public Law 93-641 attests to the fact that they have not yet been achieved and continue to challenge the health care system.

The priorities are linked to the three overall purposes of Public Law 93-641, which are equal access, improved quality of health care, and cost constraint. The linkages are shown below.

The Section 1502 Priorities	Equal Access	Quality of Care	Cost Constraint
1. Primary care for the underserved	x		
2. Coordination of health services		x	x
3. Medical group practices		x	x
4. Physician assistants	x		
5. Sharing of support services			
6. Improving quality		x	
7. Appropriate levels of care	x	x	x
8. Disease prevention	x	x	x
9. Uniform reporting systems			x
10. Health education	x	x	x

The papers in this volume consider relationships between the ten priorities and local plans and programs. A number of the papers were commissioned by the Health Resource Administration to support the development of national guidelines, while others have been adapted from studies prepared for other Government programs. We are grateful to all contributors and in the case of the derivatory papers, to their sponsoring agencies. We hope these papers will assist health planners and others in analyzing and determining how best to achieve their own goals.

Daniel I. Zwick
Associate Administrator
Health Resources Administration



Public Law 93-641
93rd Congress, S. 2994
January 4, 1975

An Act

80 STAT. 2225

To amend the Public Health Service Act to assure the development of a national health policy and of effective State and area health planning and resources development programs, and for other purposes.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled,

SHORT TITLE; TABLE OF CONTENTS

SECTION 1. This Act may be cited as the "National Health Planning and Resources Development Act of 1974".

National
Health
Planning and
Resources
Development
Act of 1974.
42 USC 300k
note.

REVISION OF HEALTH PLANNING PROGRAMS UNDER THE PUBLIC HEALTH SERVICE ACT

SEC. 3. The Public Health Service Act is amended by adding at the end the following new title:

42 USC 201
note.

"TITLE XV—NATIONAL HEALTH PLANNING AND DEVELOPMENT

"PART A—NATIONAL GUIDELINES FOR HEALTH PLANNING

"NATIONAL GUIDELINES FOR HEALTH PLANNING

"SEC. 1501. (a) The Secretary shall, within eighteen months after the date of the enactment of this title, by regulation issue guidelines concerning national health planning policy and shall, as he deems appropriate, by regulation revise such guidelines. Regulations under this subsection shall be promulgated in accordance with section 553 of title 5, United States Code.

42 USC 300k-1.

"(b) The Secretary shall include in the guidelines issued under subsection (a) the following:

"(1) Standards respecting the appropriate supply, distribution, and organization of health resources.

"(2) A statement of national health planning goals developed after consideration of the priorities, set forth in section 1502, which goals, to the maximum extent practicable, shall be expressed in quantitative terms.

"(c) In issuing guidelines under subsection (a) the Secretary shall consult with and solicit recommendations and comments from the health systems agencies designated under part B, the State health planning and development agencies designated under part C, the Statewide Health Coordinating Councils established under part C, associations and specialty societies representing medical and other health care providers, and the National Council on Health Planning and Development established by section 1503.

Post, p. 2229.
Post, p. 2242.

V

"NATIONAL HEALTH PRIORITIES

"Sec. 1502. The Congress finds that the following deserve priority consideration in the formulation of national health planning goals and in the development and operation of Federal, State, and area health planning and resources development programs: 42 USC 300k-2.

"(1) The provision of primary care services for medically underserved populations, especially those which are located in rural or economically depressed areas.

"(2) The development of multi-institutional systems for coordination or consolidation of institutional health services (including obstetric, pediatric, emergency medical, intensive and coronary care, and radiation therapy services).

"(3) The development of medical group practices (especially those whose services are appropriately coordinated or integrated with institutional health services), health maintenance organizations, and other organized systems for the provision of health care.

"(4) The training and increased utilization of physician assistants, especially nurse clinicians.

"(5) The development of multi-institutional arrangements for the sharing of support services necessary to all health service institutions.

"(6) The promotion of activities to achieve needed improvements in the quality of health services, including needs identified by the review activities of Professional Standards Review Organizations under part B of title XI of the Social Security Act. 42 USC 1320e.

"(7) The development by health service institutions of the capacity to provide various levels of care (including intensive care, acute general care, and extended care) on a geographically integrated basis.

"(8) The promotion of activities for the prevention of disease, including studies of nutritional and environmental factors affecting health and the provision of preventive health care services.

"(9) The adoption of uniform cost accounting, simplified reimbursement, and utilization reporting systems and improved management procedures for health service institutions.

"(10) The development of effective methods of educating the general public concerning proper personal (including preventive) health care and methods for effective use of available health services.

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ABSTRACT: Three models are proposed for organizing health service delivery to medically underserved populations. They are 1) primary health centers staffed principally by full-time primary health practitioners, 2) new types of group health practices and team approaches, and 3) Comprehensive Health Centers providing a wide range of health and health-related services. Health problems encountered in underserved areas and barriers to improving health care within them are reviewed.

"Sec. 1502. The Congress finds that the following deserve priority consideration in the formulation of national health planning goals and in the development and operation of Federal, State, and area health planning and resources development programs: (1) The provision of primary care services for medically underserved populations, especially those which are located in rural or economically depressed areas . . ."

Section 1502(1)
Primary Health Care Services
for Medically Underserved
Populations

*Karen Davis and Ray Marshall**

One of the most challenging tasks facing health planners is designing a program to provide adequate primary care services to medically underserved populations. Numerous barriers prevent rural people and residents of economically depressed communities from obtaining primary health care. Because these barriers are complex and interrelated, approaches which deal with only one aspect are unlikely to be successful. A broad-based systems approach which deals explicitly with these interrelationships is required. Application of the systems approach to improving primary health care is potentially rewarding since all of the often conflicting goals of the health care system can be advanced—better access, higher quality, improved health, and lower cost.

In a longer report on this subject, we reviewed the controversy which continues to surround the question of how underserved populations are to be defined. While the focus of this discussion is on medical underservice, similar conclusions and recommendations apply to dental underservice.

The question is an important one because eligibility for Federal funds under many different pieces of legislation hinges on the particular definitions selected. The definition may also subtly affect the types of solutions which are employed to eliminate underservice.

We pointed out that selection of an appropriate definition raises a number of questions. Should areas, populations, or facilities be the basis for determining the expenditures of Federal funds? Should a shortage be based on a shortage of health personnel, such as dentists or physicians, or on inadequate receipt of health care services within an area or for a given population group, or on excessive times or delays incurred in obtaining care, or on substandard or inappropriate health care in relation to the incidence of health problems, or on excessive incidence of preventable morbidity, disability or mortality? Answers to these questions depend, in part, on the nature of the problem which is being

* This paper is excerpted from a report prepared for the Health Resources Administration. The full report is being published concurrently under the above title by the National Technical Information Service, Springfield, Va. Dr. Davis was Senior Fellow, Brookings Institution and Secretary Marshall was President of the National Rural Center at the time of writing this paper. The authors note that the views expressed are not necessarily those of the officers, trustees or other staff of the Brookings Institution or the National Rural Center. They wish to thank Howard Stambler of the Bureau of Health Manpower, Edward D. Martin of the Bureau of Community Health Services, Maxine L. Rockoff of the National Center for Health Services Research, Daniel I. Zwick of the Health Resources Administration and Leighton E. Cluff of the Robert Wood Johnson Foundation for helpful comments. Research assistance by Cathy Schoen of the Brookings Institution is gratefully acknowledged.

addressed, and the objectives of the particular Federal health programs. In part, definitions also hinge on pragmatic considerations of the availability of appropriate data and the ease of understanding and implementing different designation criteria.

Three designations under current Federal law were discussed—the critical health manpower shortage areas used to define areas eligible to receive National Health Service Corps personnel, the guidelines set forth in the new Health Professions Educational Assistance Act, and the medically underserved areas (MUAs) used for the Health Maintenance Organization program, the Community Health Center programs, and portions of the Health Planning Act.

A critique of these methods and a conceptual basis for an improved approach were presented. This was followed by an attempt to set forth the magnitude of the primary health provider shortage.

The difficulties of defining and measuring the extent of medically underserved populations highlight the need for an analytical framework based on a broad systems approach. Without such an analytical framework, inappropriate solutions may be pursued, and the needs of populations in underserved areas may go unmet. For example, placing physicians in a shortage area and charging prevailing rates for services may have little impact if the major deterrents to appropriate utilization of primary health services are poverty, lack of transportation, and fear or distrust of health professionals alien to the culture of the area. Training and placing local residents as primary practitioners may not be effective if legal restrictions and third-party reimbursement policies are not conducive to their economic and legal viability.

In our longer report, we reviewed the basic conceptual approach which we feel is appropriate for the analysis of underserved areas, which focuses on health systems and non-market as well as market behavior.

This systems approach identifies the actors involved in a particular interrelated activity (like the delivery of health care, the practice of a profession like economics or law, labor relations, agriculture, etc.), analyzes the hierarchy of relationships between the actors and their relative power positions, and studies the relationships between the particular system being analyzed and the environmental context within which it operates.

This systems approach is concerned with the economic and socio-demographic context of health problems, the barriers impeding access to primary health services including lack of adequate transportation and communications systems, cultural and racial/ethnic gaps between patients and health professionals, and the interrelationships between primary health services and nonmedical services such as environmental health services, nutrition, and housing. A systems approach also takes into consideration a full panoply of obstacles which impede change, including the nature, organization, and content of practice in underserved areas, attributes of underserved areas which attract or discourage primary providers, the training of health professionals, economic and

reimbursement considerations, legal restrictions, sources of opposition from local providers or organizations, and discriminatory practices.

It is also important that health planners view the problem of underserved areas more broadly than simply the health system. Most medically underserved areas are "underserved" in other important respects. Human resource development and community development are likely to be deficient as well. If appropriately designed, solutions to the health underservice problem may have important spillover benefits for human resource and community development.

Health Problems of Underserved Areas

While the United States has extensive statistics on the health problems of the nation, they are not reported in ways which permit meaningful comparisons between the health problems of those living in medically underserved areas and residents of other areas. Most data on an area basis are broken down by metropolitan or nonmetropolitan residence, with additional subclassification in some cases by inside or outside of central cities for metropolitan statistics and urban and rural residence within nonmetropolitan areas.¹

These area classifications obscure the nature of health problems of underserved populations or medical shortage areas. Central city statistics include many higher income, well-educated, white residents with a low incidence of health morbidity or mortality as well as the poor minorities, and others with limited education who typically experience quite high rates of health problems. Nonmetropolitan areas similarly include urban areas and some rural areas which may not have a shortage of health professionals or underutilization of primary health services. Residents of other rural areas, however, have a much greater incidence of health problems because of limited health resources, transportation barriers, high rates of poverty, racial discrimination, limited education, and cultural attitudes which create barriers between residents and health professionals.

Based on area data, it is apparent that both rural areas and central city areas have a different economic, sociodemographic, and environmental context of health problems than other areas. As shown in Table 1, the population is divided roughly in equal thirds among residents of central cities, residents of other metropolitan areas, and residents of nonmetropolitan areas. About 21 percent of central city residents and 9 percent of nonmetropolitan residents are black, compared with 5 percent of metropolitan residents outside of central cities. Nearly all rural blacks are in the South, where they represent 19 percent of the rural population.

1. Rural residence is defined by the U.S. Bureau of the Census as residence in a place of 2,500 population or less. Standard metropolitan statistical areas (SMSAs) are major metropolitan cities and clusters of counties of 50,000 or more people situated around them. Some metropolitan areas, therefore, include rural residents—those living on farms or in small towns even though fairly close to major cities. About four-fifths of all nonmetropolitan residents live in rural places. A very small minority of rural residents live on farms; most reside in small towns.

Table 1. Economic and sociodemographic characteristics of the U.S. population, by residence, 1970.

	Population (in millions)	% under age 18	% age 65 and over	Dependency ^a ratio	% black population	% below poverty level	% blacks below poverty level	% poor families headed by women	Median years of school, adults 25 and over	% without telephones	% without automobiles	% without plumbing
United States	203	34.2	9.9	.79	11.1	13.7	35.6	32.9	12.1	12.7	17.5	4.6
Metropolitan	139	34.2	9.3	.77	12.0	11.2	29.0	40.8	12.2	10.5	18.6	2.7
Central city	64	31.9	10.8	.75	20.6	14.9	26.9	46.5	12.0	13.5	26.4	2.9
Other urban	80	35.5	8.0	.77	4.7	7.3	25.1	37.4	12.3			1.5
Rural	16	38.0	8.0	.85	5.0	11.2	42.8	21.8	12.0	7.7	9.2	7.0
Nonmetropolitan	64	35.0	11.3	.86	9.1	19.2	52.7	23.5	11.4	17.4	15.0	9.8
Urban	26	32.8	11.7	.80	9.2	16.1	46.0	34.6	12.1	n.a.	n.a.	5.1
Rural	37	36.6	11.0	.91	9.0	21.3	57.5	18.4	10.8	n.a.	n.a.	14.7
Ratio												
Central city to other urban metropolitan	1.08	.90	1.35	.97	4.38	2.04	1.15	1.24	.98	1.76 ^b	3.09 ^b	1.93
Nonmetropolitan rural to other urban metropolitan	.61	1.03	1.38	1.18	1.92	2.92	2.29	.49	.88	n.a.	n.a.	9.80

Source: U.S. Bureau of the Census; General economic and social characteristics, census of the population, 1970.

^a Persons under age 18 and over 64 divided by persons age 18-64.

^b Ratio of central city to other metropolitan.

Central cities and rural areas are characterized by high rates of poverty and limited education. Residents of central cities are twice as likely to be poor as other urban residents; rural residents outside major population centers are three times as likely to be poor as urban, non-central city residents. Over half of blacks in rural areas are poor, as are over a fourth of blacks in central cities. The rural population is skewed toward a high concentration of children, and both central city areas and rural areas have a disproportionate share of aged persons. Almost half of poor families in central city areas are headed by women, while four-fifths of rural poor families have both parents present. Rural residents are much less likely than other areas to have telephones within their homes; many central city residents do not have private transportation. Substandard housing, absence of plumbing facilities, and individual water supplies are more typical in rural areas than in other places. Since underserved areas differ from areas with an abundance of health resources in many respects, it is to be expected that health problems of such areas will be different both in severity and in kind. Since the types of obstacles to adequate primary health services differ even among underserved areas, receipt of health care services may also be quite different by type of health problem.

In the case of life-threatening health problems and medical emergencies, many residents of medically underserved areas find means of getting health care—sometimes at great expense and time delay. Other health problems that adequate primary health care could prevent or ameliorate are prevalent in many of these areas.

In a study conducted by the Citizen's Board of Inquiry into Hunger in the United States in the spring of 1970, Dr. Raymond Wheeler reported: "In all of the areas we visited, the nearly total lack of even minimally adequate medical care and health services was an early and easily documented observation. That which most Americans now agree to be a right of citizenship, was unavailable to most of the people whom we saw . . . We saw hundreds of people whose only hope of obtaining medical care was to become an emergency which could not be turned away . . . Most of these people live constantly at the brink of medical disaster, hoping that the symptoms they have or the pain they feel will prove transient or can somehow be survived, for they know that no help is available to them . . . For the majority of the hundreds of people we examined, it was a frustrating and heartbreaking story. We saw people with most of the dreadful disorders that weaken, disable, and torture, particularly the poor. High blood pressure, diabetes, urinary tract infections, anemia, tuberculosis, gall bladder and intestinal disorders, eye and skin diseases were frequent findings among adults. Almost without exception, intestinal parasites were found in the stool specimens examined. Most of the children had chronic skin infections. Chronically infected, draining ears with resulting partial deafness occurred in an amazing number of the smaller children. We saw rickets, a disorder thought to be nearly abolished in this country. Every form of vitamin

deficiency known to us that could be identified by clinical examination was reported."²

A report from the Rio Grande Valley of Texas in the fall of 1975 echoed the same theme:

"Almost a decade later, conditions are still the same. (Mr. de Hoya) says his children are sick much of the time from the *aqua pelligrosa*. 'I feel anger and I feel pain,' he says. 'People want to shut their eyes and not think about us. But we have suffered for quite a while now.' . . . There are diseases in the magic valley that were wiped out years ago in other parts of the country— whooping cough, tuberculosis, typhus and amoebiasis. Infant mortality is also very high, and Dr. Paul Musgrave, medical director for 20 of Texas' southernmost counties, says, 'We don't exactly advertise it, but it's not uncommon for us to have leprosy down here.'"³

While residents of underserved areas are more likely to get some care in life-threatening situations, late treatment is occasionally too late to prevent death. Thus, death rates, particularly for those of medically preventable causes, are higher in underserved areas. Age-adjusted death rates in 1969-71 for residents of central city areas and nonmetropolitan areas were 10 percent higher than for metropolitan residents outside of central city areas.⁴

Infant mortality rates are particularly high in underserved areas. In 1974, the infant mortality rate in the third health service area (HSA3) of South Carolina was 27.1 infant deaths per 1,000 live births, or 64 percent above the national average. Deaths of infants in the first 28 days after birth were 70 percent above the national average in the District of Columbia. Deaths of infants between the ages of 28 days and one year were 173 percent higher in Arizona HSA4 than in the Nation as a whole, and 6.7 times higher than in Minnesota HSA7.⁵

But death rates alone do not capture the toll of inadequate primary health care. Inadequate preventive and basic health care services lead to high incidences of conditions which could be prevented, such as whooping cough, and to disabilities which could be prevented from early treatment, such as for otitis media. Thus, many individuals who could live healthy productive lives are plagued by deteriorating chronic conditions which handicap them and acute conditions which impart preventable pain and torture to children and adults alike. Urinary tract infections, hypertension, ear infections, tooth decay, uncorrected visual deficiencies, infected skin sores, venereal disease, and other acute and chronic conditions may not pose immediate threats to life, but if untreated impart unnecessary pain, limit present and future productivity, and diminish the quality of life.

2. Wheeler, Raymond: Health and human resources. Southern Regional Council, Atlanta. New South 26:4: 16-22. Fall, 1971.

3. Newsweek, November 24, 1975, pp 16-22.

4. National Center for Health Statistics: Health United States 1975. DHEW Pub (HRA) 76-1232. Health Resources Administration, Rockville, Md.

5. Infant mortality and related rates by Health Service Areas, 1969-73 and 1974. No 2 data supplement, statistical notes for health planners. National Center for Health Statistics, Rockville, Md., July 1976.

Table 2. Use of preventive services by residence, race, and income, United States, 1973.

	% 40 yrs. + and never had EKG	% 40 yrs. + and never had glau- coma test	% 17 yrs. + and never had chest x-ray	% 3 yrs. + and never had eye exam	% females 17 years + and never had Pap smear	% females 17 years + and never had breast exam	% 17 years + and never had routine physical
U.S.	35.9	41.0	13.2	9.0	21.0	19.4	9.8
Residence							
SMSA	32.8	37.7	11.4	8.0	19.5	17.4	7.8
Central city	31.9	40.2	10.9	8.9	20.5	18.1	8.8
Outside C.C.	33.6	35.6	11.8	7.4	18.7	16.8	7.1
Non SMSA	42.5	48.0	17.2	11.3	24.3	23.9	14.0
Race							
White	35.4	39.8	13.4	7.9	20.5	18.9	8.9
Black and other	41.0	51.4	11.5	16.7	24.8	23.2	14.8
Family income							
Under \$3,000	37.6	50.8	18.8	11.9	39.0	34.8	20.3
3,000-4,999	36.4	46.6	14.9	10.4	28.1	25.7	18.3
5,000-6,999	35.2	45.1	15.0	11.7	21.7	21.3	15.3
7,000-9,999	38.5	43.4	13.5	10.0	17.7	16.7	14.3
10,000-14,999	38.3	40.6	12.0	8.8	15.5	14.4	7.1
15,000 and over	32.1	31.7	9.9	5.9	14.9	13.2	4.4
Ratio to rates for SMSA Outside Central City							
SMSA-Central City	.95	1.13	.92	1.20	1.10	1.08	1.24
Non SMSA	1.26	1.35	1.46	1.53	1.30	1.42	1.97
Black and other	1.22	1.45	.97	2.26	1.33	1.38	2.08
Income under \$3,000	1.12	1.43	1.59	1.61	2.09	2.07	2.86

Source: Use of selected medical procedures associated with preventive care. National Center for Health Statistics, Series 10, No. 110. In press.

Neglect of many conditions until they reach life-threatening stages is not only a tragic waste of human resource potential but also unnecessarily costly due to extensive hospitalizations and use of specialized health personnel and facilities. For example, skin infections when untreated can and do deteriorate into severe joint inflammations requiring expensive hospitalization and resulting in crippled arms and legs. Early medical care, counseling parents regarding appropriate cleansing and treatment of sores, or reduction in insect bites through environmental health activities such as draining puddles, spraying for mosquitoes, and placing screens on windows and doors are all relatively inexpensive methods of preventing such tragedies from occurring and from adding their burden to the health care bill for the nation. In many such ways, primary health services can help to improve the health of patients, reduce health care costs over the long term, and improve the quality of life for many.

Statistics document the lower rates of preventive services among rural residents, and also among disadvantaged groups such as blacks and the poor. As shown in Table 2, residents of nonmetropolitan areas are about 40 percent more likely than metropolitan residents outside central cities never to have had such preventive services as electrocardiograms, glaucoma tests, chest x-rays, eye examinations, Pap smears, and breast examinations, and twice as likely never to have had a physical examination. While central city residents as a whole do not appear to have markedly fewer preventive services than non-central city residents, certain population groups such as blacks and the poor (who represent a disproportionate share of central city residents) do appear to lag well behind others in receipt of preventive services.

Preventive services are important in both preventing the incidence of certain health problems (such as immunizations for contagious diseases) and in identifying conditions at an early age (such as Pap smears and breast examinations). A wide range of health conditions, however, are not amenable to prevention or discovery prior to the onset of symptoms. Preventive services can do little to prevent the onset of such conditions as urinary tract infections, ear or throat infections, diabetes, venereal disease, burns, cuts, or broken bones, diabetes, hypertension, asthma and so forth. Because of the environmental context in which many residents of medically underserved areas live, the incidence of acute and chronic conditions is typically higher than in other areas, so that their need for ameliorative primary health services is intensified. It is these problems that may frequently go untreated until they deteriorate into serious disabling conditions or conditions requiring hospitalization.

As shown in Table 3, residents of central city areas are 19 percent more likely to be restricted in their activity due to chronic conditions than other metropolitan residents, while nonmetropolitan residents are 27 percent more likely to be so restricted. In the South, limitation of activity is 36 percent more prevalent than in the Nation's metropolitan non-central city areas. Similarly both nonmetropolitan residents and central city residents have a greater incidence of days of unrestricted activity and bed disability than do other metropolitan residents. Hospitalization occurs 27

Table 3. Health status and use of medical services by residence, 1973-1974.

	Percent of population with activity limitation	Days of restricted activity per person	Days of restricted activity per person age 45 and over	Days of bed disability per person	Days lost from work per employed person	Number of hospital discharges per 1,000 persons	Number of MD visits per person	Percent with no MD visits per person	Number of DDS visits per person	Percent with no DDS visits during year
U.S.	13.8	16.8	27.2	6.5	5.2	140.5	5.0	25.1	1.8	51.9
SMSA	13.1	16.7	26.0	6.7	5.3	131.0	5.2	23.9	1.8	49.6
Central City	14.4	18.5	29.2	7.7	5.8	136.2	5.3	24.5	1.6	52.9
Outside C.C.	12.1	15.3	23.2	5.8	4.9	127.1	5.2	23.5	1.9	45.3
Non SMSA	15.4	17.1	29.8	6.2	4.9	161.4	4.5	27.6	1.3	55.2
South	14.5	18.6	33.4	7.5	5.5	152.5	4.8	25.9	1.3	56.6
SMSA	13.1	17.7	29.3	7.4	5.6	137.8	4.9	24.3	1.4	53.5
Central City	13.9	19.0	32.3	8.4	5.7	135.7	4.8	25.5	1.3	57.4
Outside C.C.	12.3	16.4	26.7	6.5	5.5	139.8	5.0	23.2	1.6	49.7
Non SMSA	16.4	19.8	34.2	7.5	5.4	171.9	4.6	28.0	1.1	60.7
Ratio to SMSA - Outside Central City Rates										
SMSA - Central City	1.19	1.21	1.26	1.33	1.18	1.07	1.02	1.04	.84	1.17
Non SMSA	1.27	1.12	1.28	1.07	1.00	1.27	.87	1.17	.68	1.22
South - Non SMSA	1.36	1.29	1.47	1.29	1.10	1.35	.88	1.19	.58	1.34

Source: Health characteristics by geographic region, large metropolitan areas, and other places of residence, United States, 1973-74. National Center for Health Statistics, Series 10, No. 113, in press.

percent more frequently among nonmetropolitan residents than among non-central city metropolitan people, and 35 percent more frequently in the nonmetropolitan South.

Utilization of ambulatory physician and dental services among underserved areas, however, is well below that of other areas. Nonmetropolitan residents have 4.5 physician visits annually, compared with 5.2 visits for metropolitan residents, even though rural areas have a higher concentration of aged persons with typically higher use of physician services. Disparities in receipt of dental services are even greater, with nonmetropolitan residents averaging 68 percent as many visits as metropolitan non-central city residents.

These statistics probably understate the disparity in utilization of services and health problems of medically underserved areas and other areas and of certain populations within given areas. More detailed reporting on a local area basis would yield a better appreciation of the magnitude of these differentials. More importantly, greater disaggregation by type of health problem and type of health areas and suggest where priorities for health resource development might be established.

Obstacles to Improved Health Care in Medically Underserved Areas

The health problems of underserved areas are different from other areas, and generally more severe. What is more, health problems are more closely interrelated to the particular economic and environmental factors at play in medically underserved areas. Thus, any single, narrow attack on medical care alone is unlikely to be effective.

Aside from the nature of health problems in underserved areas, however, several forces act to impede progress. These include 1) inadequate financing of health services in underserved areas; 2) characteristics in the nature of medical practice; 3) incentives in the medical system and training of health professionals which mitigate against underserved areas; 4) legal restrictions and opposition of the medical, nursing, and other health professions; and 5) racial and ethnic barriers and discrimination that are particularly serious in underserved areas where few alternative sources of care are available.

Financing Health Services in Underserved Areas

Lack of purchasing power is a major barrier in many underserved areas, impeding financial access to the health care system. Poverty rates are higher, so that many are unable to obtain care without some financial assistance. Private insurance coverage tends to be limited since many residents of such areas are unemployed or work in marginal jobs in small nonmanufacturing firms where good employer group plans are scarce.

In recent years public programs have been enacted to meet a portion of these gaps in private insurance coverage. However, in rural areas most of the poor are not covered by Medicaid, since only 40 percent meet the eligibility characteristics of aged, blind or members of one-parent families. A greater proportion of central city residents qualify for Medicaid, but low rates of reimbursement discourage many providers

from participating. Most of the rural poor are concentrated in the South, where both the number of persons covered and the level of benefits for those covered are quite low.

Medicare also discriminates against rural areas by paying lower rates to physicians, and refusing to cover services provided by primary practitioners (e.g. nurse practitioners and physician assistants) unless a physician is present at the health center when care is provided. In many rural areas, distances require that primary practitioners be located at sites away from supervising physicians. Medicaid policy varies from State to State, with some States paying for primary practitioner services and others failing to do so. Even where payment is made, payments are frequently made to the supervising physician rather than the health center employing the primary practitioner.

Nature of Medical Practice in Underserved Areas

A major problem in establishing an adequate health care system in underserved areas is related to attracting health professionals, particularly physicians, into those areas. There are many reasons for this, including:

1. Medical professionals are concerned about being isolated professionally if they establish rural medical practices. Few opportunities are available for the continued professional development of rural physicians. While some States are moving toward greater decentralization of medical education, few internship and residency positions are available in rural areas. Thus, rural physicians are not exposed to the latest in medical science.

2. Because there are few health professionals in rural areas, those who do locate there tend to have very limited time for their families or for recreation. Rural physicians are normally obligated to be available 24 hours a day while their urban counterparts can tell patients to go to a hospital emergency room or find someone else. Overwork is therefore a major cause of discontent among rural physicians.

3. The limited availability of physicians in rural areas means that those who are there must see a lot of patients.⁶ To handle this load, physicians cannot spend as much time with each patient as he or she would in a less hectic practice. Patients recognizing this pace of practice are likely to come only with urgent medical problems. Preventive care is neglected. Fewer support services such as laboratories, physician specialists, mental health professionals, and social agencies are available in rural areas. Thus, rural physicians have fewer resources, and many essential aspects of complete health care may be inadequately addressed. Rural physicians often leave rural areas because they do not feel that they do as much for their patients as they could in other areas.

4. Population densities also make it difficult to establish rural medical practices, because a minimum population is required to support a

6. For example, total patient visits average 166 per week for nonmetropolitan physicians and 105 per week for physicians in large metropolitan areas. Cf. Profile of Medical Practice 1975-1976, American Medical Association, Chicago, 1976. p. 135.

physician. It would be difficult to establish traditional medical practices in relatively small places. However, it might be possible to establish rural health systems using primary health practitioners to extend medical care into relatively small communities. The population of a small town might not justify a physician, but it might support a nurse practitioner supervised by a physician located in a larger town.

5. Although rural doctors have net earnings equal to or higher than their urban counterparts, the costs of establishing rural medical practices apparently are much greater than the costs of establishing urban practices. All of the relative cost components are not immediately apparent, but a major reason for higher rural start-up costs is the necessity of building facilities and establishing components in rural places that are not necessary in urban places where support services are provided by other groups, laboratories are available, and medical office space can be rented. In rural areas, on the other hand, buildings are not likely to be available, utilities must often be brought in at considerable expense, and roads or parking lots may even have to be paved. In other words, a rural practice must internalize certain costs that are external to an urban practice.

6. Rural areas often have trouble attracting health professionals because those communities lack the cultural, entertainment, educational, and housing facilities many professionals are likely to require. Moreover, the dominant value systems of many small towns and rural areas are likely to be incompatible with those held by many medical professionals. Special efforts, therefore, are required to match health professionals with rural communities.

Some new trends may affect some of the historic disadvantages of rural communities. A growing preference for rural life, reflected in the opinion polls, appears to be spreading to health professionals. An increase in women pursuing professional careers may lead to more husband-wife teams interested in rural practice.

Many of the same obstacles impede improvements in health care for medically underserved residents of urban areas. Among important obstacles involving the nature of medical practice in central city areas are:

1. Large practice workloads, particularly in hospital outpatient departments and private practice, make it difficult for physicians to provide thorough, high quality care. Dissatisfaction with the type of care which can be provided in such organizational settings is a major disincentive for central city practice.

2. The organizational structure of hospital outpatient departments geared toward specialty care makes it difficult for physicians to care for the entire patient and be familiar with the family context in which health problems arise.

3. High crime rates and the tensions of inner city practice discourage many physicians from such practice.

Most objections to practices in underserved areas can be overcome through specific policies, such as the development of group physician

practices, team approaches to health care, promotion of primary health practitioners, and improved professional support services. It is possible, however, that the nature of the medical system will counteract any positive changes which are made.

The Medical System and Legal Restrictions

The medical system is a system in the sense that it has certain interrelated values and institutions which condition the nature of its processes and outcomes. In the United States, this system has certain actors whose powers and interests cause the system to be what it is. The central actors in the systems have been physicians, who make most major medical decisions.

Although it has never been monolithic, and there are some encouraging trends toward a higher percentage of family practitioners, the medical system has held several dominant values which cause it to be biased against rural and inner city practice. One such value has been specialization. An increasing proportion of medical care is delivered by specialists who require dense populations and close association with medical centers. Even training programs for new health practitioners have frequently been specialized to segments of the patient population. Rural areas are not likely to be very attractive to specialists nor are such specialists suitable for meeting the health care needs of the entire rural population. Use of specialists in inner city areas frequently means that care of a given patient is fragmented among a number of specialists, and primary health services are neglected.

Similarly, there has been a proliferation of medical technology, much of which also must be located in urban areas or medical centers in order to be used effectively. Since medical role models are likely to be specialists and "good" medical practice requires considerable technology, even those medical students strongly inclined to rural practice tend to become socialized by the natural desire to conform to the values communicated in medical schools.

Other features of the present medical system that tend to be incompatible with the requirements of effective health care delivery include: 1) The emphasis on curative rather than preventive medicine, and on medical solutions to illness rather than solutions specifically addressing such causes as inadequate sewage disposal, impure water supplies, or malnutrition; 2) the restrictions on the use of primary health practitioners who could perform many medical tasks; and 3) emphasis on solo physician practice, which is likely to cause physicians to be overworked and professionally isolated.

We do not wish to imply by the foregoing that the medical system in the United States has been oblivious to the needs of rural and inner city areas or even that it is consciously hostile to the health needs of rural and inner city people; rather, we merely emphasize that what appear to us to be the dominant trends in American medical practice causes that system in the main not to address itself to the needs of rural and inner city people as effectively as it might.

Minorities and Health Care in Underserved Areas

A surprising incidence of insensitive and/or discriminatory practices toward black, Mexican American and other minorities still persists in many areas. Some physicians in the South still maintain segregated waiting rooms, and black patients are frequently restricted to certain hours of the day in seeing private physicians. Hospitals are built with private rooms to prevent mixing of patients, and in some instances hospital dining rooms are segregated. Language barriers, ignorance of cultural traditions, and insensitivity are also encountered among health providers serving Spanish-speaking minorities.

Other practices are more subtle but may have serious consequences for the health of minorities. In our study of rural health care in the South, we discovered that cursory, inadequate physical examinations are frequently given to minority patients. In some places, rural blacks are unaware that it is customary to undress for medical examinations while this procedure is common among whites in the same area. Blood pressure readings are taken through the clothing of black patients, thus increasing the risk of inadequate measurements, a particularly serious problem for blacks with a high incidence of hypertension. Minority women are less likely to receive professional preventive services such as Pap smears and breast examinations. High rates of hysterectomies on minority women are also seen in some areas.⁷

Instances of discriminatory or insensitive treatment are particularly burdensome for rural and inner city minorities, for whom few alternative sources of health care are available.

Toward Improved Primary Health Services in Underserved Areas

Because there are significant obstacles to improved primary health services, a broad-gauged systems approach will be required to effect permanent change. Many of the failures of the past to attract or retain primary health providers in underserved areas can be traced to their narrow focus on only a single aspect of the health care system. An overall strategy for change should be based upon changing the nature, content, and organization of practice in underserved areas, changing the types and methods of training health professionals, altering the current methods of reimbursing health care under public and private programs, and changing legal restrictions which impede innovations in health service delivery.

Particular solutions should be designed with the needs of given areas in mind. The best approach for a small rural place is likely to be quite different from that of a larger town. Areas with a concentration of poverty or of particular racial/ethnic barriers may require still different approaches.

While much remains to be learned about the most effective approaches

7. For preliminary findings of this study cf. Davis, K. and Ray Marshall: Rural health in the South: preliminary summary report to the Task Force on Southern Rural Development. Atlanta, Ga., October 1975.

for different types of underserved areas, there are three organizational models of health service delivery which strike us as promising: 1) primary health centers staffed primarily by full-time primary health practitioners rather than physicians; 2) new types of group health practices and team approaches; 3) Comprehensive Health Centers providing a wide range of health and health-related services.

Primary health centers work well in small rural places which cannot economically support a physician or which are not attractive to physicians as practice locations. Use of local primary health practitioners can provide a stable source of health care if provided in a community-sponsored organizational setting. This model may also be appropriate in some inner city neighborhoods, where it is important to have primary health providers familiar with the home and community context of health problems.

Community-sponsored group medical practices using a team approach to care can also be valuable in medium-sized towns serving a larger rural population (6,000 to 20,000 people) or inner city areas. A professional manager can help make a group practice economically viable, even in relatively low-income areas, through promotion of more efficient methods of management, familiarity with sources of funding for center activities, and better collection of patient bills. Delegation of some tasks to lesser trained health professionals can also relieve physicians and make more efficient use of existing physicians. An organizational arrangement which permits time off for continuing education, interaction with professional peers, and supporting services from laboratories and other types of professionals can be attractive to physicians and other primary providers.

Comprehensive Health Centers appear to be particularly appropriate for areas where poverty is deeply engrained, where nutritional and environmental factors are major contributors to poor health, where health care can be used to promote community development, or where discriminatory or insensitive practices on the part of existing providers exclude minorities from adequate primary health services.

All of these approaches try to change the current health care system, rather than trying to work within the current mode of private practice or traditional hospital outpatient departments. They share in common a strong emphasis upon nonprofit organizational structures with community boards, use of primary physicians and primary health practitioners on a salaried basis, and the substitution of less specialized for more specialized personnel wherever possible without undermining quality standards.

Community Sponsorship of Primary Health Services

While different underserved areas can benefit from a different mix of primary health provider staffing and range of services, community sponsorship in all approaches has strong advantages. Formation of a nonprofit community corporation which takes responsibility for recruiting health professionals and obtaining essential developmental financial

support is one means of providing a stable, ongoing organization in underserved areas. Thus even if some turnover of health professionals occurs, patients have a permanent place equipped with their medical records to turn to for medical care.

Community people take a keen interest and deep pride in upgrading the quality of life in their community; their diligent efforts in behalf of a health project are important resources which can be tapped through this approach. This dedication often has financial payoff for evolving health centers, either through local fund raising or through donations of labor and materials.

Community sponsorship has other important spinoff benefits. In some communities where feelings of helplessness and hopelessness have led to serious mental health problems, a successful community effort to sponsor a health project, raise developmental funds, and recruit health professionals can have important impacts on the mental health of the community. Leaders of the project become recognized as "doers" and the community begins to feel that it can affect the quality of community life. Citizens who have learned to obtain local revenue sharing funds from county commissioners for a health project begin to feel that other essential public improvements are also possible—from paving a road to improving local water supplies and sewage disposal. Citizens who have learned to unravel the secrets of Federal grantsmanship to obtain funding for a health project become sophisticated in seeking support for improved housing. Since health is an uncontroversial issue in most underserved communities, it is an issue around which community citizens can unite and then use as a lever for change and community economic development generally.

Different types of community sponsorship appear to work well in different situations. In communities where needs of minorities or poor people have been neglected and improvement in their position opposed by local forces, an indigenous, patient-elected board has been extremely successful in acting for the improved economic and social position of these groups. These health projects in some cases have contributed to the development of political leaders championing the cause of the poor and minorities. In other communities where poverty and racial discrimination are not factors, a community board made up of the local power structure—bankers, lawyers, and politically powerful figures—has been of assistance in obtaining requisite legal advice, financial assistance, and local and State government support. Whether such a constituted board membership is desirable or not depends in large part on whether it identifies with and shares the goals of the health project.

Primary Health Centers

A newly emerging model of primary health delivery which shows considerable promise for some types of underserved communities is the primary health center. Typically, primary health centers are nonprofit organizations formed by local community groups or by State or local governmental agencies. These centers are small-scale organizations,

employing one or two primary health practitioners, a receptionist who may also double as a laboratory technician, and a part-time physician who supervises the full-time nurse practitioners or physician assistants under contract to the center. Supervisory physicians may also agree to see patients at the health center one or more days a week. Some health centers may supplement this staffing pattern to include community health workers to assist the primary health practitioners and provide patient or community health education and outreach services.

While they possess some characteristics in common, primary health centers take a variety of forms throughout the country. Some are fixed facilities while others use mobile vans to rotate through small communities on a scheduled basis. Some are freestanding health centers, others are satellites of a group practice or comprehensive health center in a larger town. Some health centers have affiliated with other primary health centers to share physician personnel or administrative services. Part-time physician services may be obtained from private practicing physicians in more distant, larger communities, from medical school faculty, National Health Service Corps physicians, or physicians directly employed by the primary health center.

Experience with this delivery model suggests that primary health services can be provided at relatively low cost in many communities. Primary health centers employing two primary health practitioners and other support staff average budgets of \$60,000 annually, and see 20 to 25 patients daily. At fairly modest fees (\$10 to \$12 per patient visit) the primary health center can recover its costs. The low cost of the centers means that many rural communities which are too small or too poor to support a more expensive approach to health care can have access to primary care health services through this type of center. Enhanced access to preventive services, proper monitoring of chronic conditions, and basic acute illness care are all important benefits which can be achieved by promoting the development of primary health centers which tap the resource of primary health practitioners.

One strong advantage of this approach is recruitment and retention of qualified health personnel. Primary health centers which employ local residents who have been trained in local nurse practitioner or physician assistant training programs have had particularly good success in attracting and retaining professional personnel. Thus, many communities which are not attractive to physicians as places to reside or practice can benefit from primary practitioner services.

One of the most extensive primary health center programs developed to date is in the State of North Carolina. The State enacted a Rural Health Act in 1973 which authorized it to provide start-up support to community groups wishing to establish primary health centers. Initial funding from the State for construction or renovation of a facility was limited to \$60,000 with local communities required to match every \$5 of State funds with \$1 of locally contributed support. The State also agrees to subsidize operating expenses on a declining basis for the initial three years.

The State provides extensive technical assistance to the community

throughout the entire process of establishing and operating a primary health center. It assists the community in a local fund-raising drive, outlines the procedures for establishment of a nonprofit organization through the Internal Revenue Service, assists the community in selecting a qualified registered nurse to enter the University of North Carolina nurse practitioner training program and provides a stipend to the student. It provides architectural renovation of a health facility, oversees the writing of a contract between the health center and the supervising physician, and demonstrates business and medical record-keeping systems to the community.

The State has also carefully worked out a number of steps to ensure that the quality of care provided is acceptable. The Nurse Practitioner Act and Medical Practice Acts were amended to outline conditions under which nurse practitioners could provide treatment—including provisions for adequate training (at least one additional year for an experienced registered nurse), provisions for physicians backup (a physician must agree to sponsor the nurse practitioner, and be available by telephone anytime she or he is seeing patients), and provisions for monitoring of nurse practitioner performance (written protocols are established and all decisions requiring medical judgment must be countersigned by the sponsoring physician within a specified time period.) Medical malpractice insurance has been obtained for the primary health practitioners and supervising physicians at modest cost.

This approach to health care, while possessing substantial advantages for many communities, does have several potential drawbacks. One major difficulty is that major third-party insurance programs are quite restrictive about paying for services rendered by primary health practitioners when a physician is not physically present at the time services are rendered. As pointed out earlier, Medicare does not pay for services under these conditions. Some States will cover the services under the Medicaid program but even in those States covering the services, payments are frequently made directly to the sponsoring physician rather than to the health center necessitating a negotiated agreement between the health center and the physician which often favors the physician. The Medicare program is currently engaged in a study considering possible liberalization of reimbursement policies, but opposition from organized medicine or other pressures to contain costs may make it difficult to achieve adequate compensation for these services.

It will take time to see whether other longer-range difficulties are encountered. Rural health centers staffed by a single nurse practitioner eventually may face many of the difficulties currently confronting solo physicians. In some health centers, nurse practitioners have left because the demands on their time after regular office hours have been too heavy. In other centers, nurse practitioners have refused to take after-hour calls, and refer all requests to the sponsoring physicians. Other nurse practitioners have found it desirable to live outside the community in which they practice and commute to work, which spares them part of the demands on their time arising after hours. Isolated nurse practitioners

also complain that they are not receiving the opportunities for continued professional development that they would like to have. These problems of heavy work loads and professional isolation are reduced considerably in projects which have employed two or more nurse practitioners and have established relationships with physicians for adequate support services and with medical and nursing schools for continued education.

Group Health Practices

Another approach to primary health care which appears to be working successfully in a number of underserved communities is the development of group health practices. These are staffed by two or more primary care physicians working in a team with primary health practitioners such as nurse practitioners, nurse midwives, and physician assistants. Some group practices also include dentists and dental auxiliaries. Management of the practice is typically the responsibility of a trained, non-physician professional manager who views the practice as a business which must be efficiently managed to be economically viable.

Again, this approach encompasses a number of variations. Some innovative groups are organized on a for-profit basis, and depart from traditional groups only in their use of the team approach and emphasis upon professional administrators.

The Robert Wood Johnson Foundation is funding the establishment of 25 Rural Practices organized as nonprofit corporations with boards composed of leading members of the local community. A pilot project has been funded in Hindman, Kentucky, and a large-scale demonstration is now underway. This approach emphasizes good management, and requires that the Rural Practices become self-supporting within a three-year period. Organized on a nonprofit basis, any surpluses are to be used to provide non-paying health services such as community health screening and environmental health services. The basic objective of this approach is to select outstanding physician-manager teams who will make a permanent commitment to the community in which they establish a practice, and provide stability of leadership to the practice and to the community. Foundation support is approximately \$500,000 for the three-year period for each practice. These funds support developmental costs and subsidize initial operating deficits. After reaching a mature, self-supporting stage, it is anticipated that overall operating expenses and revenues will average approximately \$400,000 annually.

The U.S. Department of Health, Education, and Welfare has also expanded its primary health delivery activities to emphasize this approach. The Rural Health Initiative program supports health centers staffed by physicians, dentists, and primary health practitioners, many of whom are or have been National Health Service Corps employees. (Currently, only 13 percent of National Health Service Corps health professionals remain in the community in private practice at the end of their two-year assignment.)⁸ The Corps is trying to increase its longer-

8. Bureau of Health Manpower, Office of Program Development. Report 77-25b. Health Resources Administration, Bethesda, Md. October 13, 1976.

term retention of health professionals in underserved areas through more careful matching of personnel with communities.

The Rural Health Initiative projects try to emphasize a systems approach to health care, and urge practices to establish formal and informal agreements with county health departments, area medical schools, and specialized support services.⁹

Other group practice approaches promote prepayment or capitation methods of compensation. Health Maintenance Organizations have been established in a number of underserved communities. The U.S. Department of Health, Education, and Welfare has also supported some family health centers, which are characterized as "moving toward" the Health Maintenance Organization form. Family health centers are required to have some portion of patients enrolled on a capitation reimbursement basis.

While considerable variety among group medical practices exists, their central common characteristic is that they emphasize medical services provided by a group of primary care physicians. Their main emphases are finding characteristics of practice which will appeal to physicians and induce them to locate in underserved communities.

From the experience to date, it would appear that this approach to health care is extremely attractive to physicians. Group practices can overcome most of the professional objections to underserved practices including the long hours, heavy demands, and professional isolation. This approach provides opportunities for time off to pursue continuing education activities. Physicians in the group and their families frequently form their own social unit—thus overcoming some of the social and cultural isolation of rural practice as well.

Emphasis upon good management provided by non-physician, trained administrators also appears to be a major strength of this approach. In some cases, physicians were at first reluctant to add administrators for fear that this would reduce physician incomes. After trying this approach, however, physicians have become convinced that administrators add more to the practice than they cost—and that physician incomes have risen rather than having been spread more thinly through acquisition of a skilled administrator. Removal of the paperwork burden, and duties of collecting patient revenues have also made physicians generally more satisfied with rural practice. Furthermore, efficient management of the practices has made them financially viable even in fairly low income areas.

There are several potential disadvantages, however, with some types of group medical practices. These include exclusive emphasis upon profit-making medical problems to the neglect of less profitable environmental or other factors causing poor health. Another danger is that emphasis upon economic self-sufficiency will make the practices less sensitive to the needs of poor people, so that only a portion of the community benefits from the practice. Even some National Health Service Corps projects

9. Bureau of Community Health Services: Building a rural health system. DHEW Pub (HSA) 76-15028. Health Services Administration, Rockville, Md., 1976.

have failed to serve the entire community because high fees have excluded the poor. More evidence on the experience of this approach should be obtained and alternative variations of the group health practice approach watched to see how some of these potential disadvantages can be minimized.

Comprehensive Health Centers

Many rural and inner city underserved areas are characterized not only by a shortage of health personnel but also by poverty and deeply engrained health problems. Dental health, particularly in rural areas where fluoridated water supplies are lacking, is frequently a serious problem. Mental health problems related to the lack of jobs and income, stresses of urban living and lack of cultural or recreational outlets in rural communities are also extremely serious problems in many underserved communities. Many residents with limited education are unaware of the importance of good health habits, or the necessity of preventive care and early treatment of accidents and illnesses. Transportation barriers, the lack of public or private transportation, or the immobility of residents of underserved areas related to chronic conditions or fear of crime, all impede access to adequate primary health care. Deteriorated housing, lack of screens to keep out mosquitos and other insects, rodent infestation, lack of plumbing, unsafe sources of heating, impure water supplies, and incomplete kitchen facilities contribute to the incidence of health problems. Inadequate nutrition and improper methods of food preparation such as failure to sterilize infant feeding bottles contribute to serious illness often resulting in death or long-term disability.

A narrow, medical approach to the health problems of such communities is unlikely to be particularly effective. Simply placing one or more primary health providers in underserved areas—and charging relatively high fees for their services—will do little to meet the health care needs of the community. Taking advantage of the opportunity to use health care to promote community development and upgrade the quality of life in the community as well as achieve permanent improvements in health requires a more comprehensive approach.

The Comprehensive Health Center program originated by the Office of Economic Opportunity and transferred to the U.S. Department of Health, Education, and Welfare, is one approach which is ideally suited for these types of underserved communities. The Centers provide primary medical care, dental care, prescription drugs, mental health services, outreach services, nutrition programs, transportation services, environmental health services, home health services, and child development programs.

Although carried out on only a limited demonstration basis (150 projects serving 1.5 million people compared with initial plans for 1,000 centers serving 23 million people), the centers have been remarkably successful at achieving a wide range of goals.¹⁰ They have provided employment to the poor and enabled them to upgrade their educational

10. Cf., Davis, K.: *Health and the war on poverty: A ten-year appraisal*, Brookings Institution, Washington, D.C., in draft.

and job skills. They have been a force for economic development and human resources investment in low-income communities. They have served as a lever for social, economic, and political advancement of the position of minorities. They have demonstrated that quality health care can be provided in low-income communities using innovative approaches to health care including use of primary health practitioners, community health workers, outreach efforts, and community participation in the governance and operation of centers. They have overcome many of the multitude of barriers impeding access to health care and improvements of health of extremely poor communities. They have demonstrated that they can improve health in a variety of dimensions, such as reduced infant mortality rates and reduced incidence of serious illness, and they have succeeded in reducing hospitalization among the patients they serve by 30 percent. Despite the fact that they have taken a broad-gauge approach to solving health problems of the poor, they have demonstrated their ability to be cost-effective. Cost per patient served averages \$200 annually, which is comparable to the average payments made in the traditional sector for physician and laboratory services and drugs. Cost savings from reduced hospitalization and improved health indicate that they are in fact, a lower cost alternative than traditional methods of providing care.

System-Wide Change

While these approaches to delivering primary health services show great promise for different types of underserved communities, they require a number of supporting changes in the reimbursement of health services, in legal restrictions affecting primary health practitioners, and in the training of health professionals.

Changing the financing of primary health care is particularly crucial to the economic viability of many primary health initiatives. National health insurance would greatly benefit rural underserved communities, which currently have little private health insurance coverage and tend to be excluded from Medicaid because the poor are mostly two-parent families. Only half the States cover families with a father present, and then only if the father is unemployed and not receiving unemployment compensation. National health insurance is likely to perpetuate many of the inequities of Medicare and Medicaid, however, unless it is specifically designed with the needs of inner city and rural residents in mind.

Fee schedules for physicians should not penalize practice in underserved areas, as they now do in Medicare. Services of primary health practitioners should be covered if utilized in an organized system of care, even if a physician is not physically present at the time services are rendered. Primary health centers, group health practices, and Comprehensive Health Centers organized on a nonprofit, community-sponsored basis should be certified as providers of primary health services and eligible for direct reimbursement at an adequate rate. A health resources development fund should receive a fixed portion of national health insurance expenditures, and these funds should be targeted on

personnel who desire to locate in rural communities and on the development of innovative approaches to health care delivery in underserved areas. The National Health Service Corps should continue to experiment with a greater variety of approaches to rural health including more emphasis on primary health centers, group health practices, Comprehensive Health Centers, a greater role for community residents in the management of practices, and better technical assistance to Corps practices.

Legal support and technical assistance should be given to promote the effective use of primary health practitioners. State Nurse Practice Acts and Medical Practice Acts should be amended to permit nurse practitioners and physician assistants with appropriate training to treat patients and write prescriptions subject to requirements of physician backup and supervision, written protocols, continuous auditing of primary health practitioner performance and continuing education. They should be permitted to see patients without the physical presence of a physician, if the backup physician is available by telephone for consultation and such physician participates in a continuous auditing of primary health practitioner performance.

A long-run trend in the prevailing medical system in the United States has been toward specialization, which causes the training of physicians to be biased against practice in underserved communities. There have been in recent years, however, several encouraging trends in health professional education which should be nurtured and supported. The establishment of Area Health Education Centers and family practice residencies in underserved communities provides opportunities for continuing education of primary health providers and for exposure of students to opportunities for service. More attention should be given to training physicians and other health professionals specifically for rural and inner city practice. Special programs such as Student Health Coalitions should be established to acquaint medical students with rural and inner city health problems and medical practice through summer health fair programs. Greater support should be given to the development of localized primary health practitioner training programs. Admission and scholarship procedures of medical, dental, and nursing schools should be reviewed to ensure that students are familiar with sources of financial support for education.

ABSTRACT: Community (often called "free") clinics provide insight into how the poor and disadvantaged would like to see medical care organized. The clinics are providing new definitions of health and illness, redefining what are 'appropriate' health activities, and giving new answers to the questions of who should govern and who should staff health centers. The medical care system must consider the views of the underserved populations if Priority 1502 (1) is to be realized. The involvement of community clinics in health planning programs is urged.

"Sec. 1502. The Congress finds that the following deserve priority consideration in the formulation of national health planning goals and in the development and operation of Federal, State, and area health planning and resources development programs: (1) The provision of primary care services for medically underserved populations, especially those which are located in rural or economically depressed areas . . ."

Section 1502(1)

The Medically Underserved: Lessons from the Community Clinics

David E. Hayes-Bautista*

There appears to be an unnoticed but potentially major contradiction in the National Health Planning and Resources Development Act. On the one hand, Section 1502 (1) urges primary care for medically underserved populations, especially those which are located in rural or economically depressed areas. On the other hand, the Act implicitly defines medical care in Section 1502 and elsewhere as the care which is currently being provided in the United States today.

Wherein lies the contradiction? A large proportion of the medically underserved population is unlikely to benefit from a mere increase in medical services as they are defined in the Act. This is due to at least three reasons:

1. The medically underserved population views its health problems very differently and seeks different solutions to them than does standard medical care.

2. Medical care has shown itself to be not interested in these problems, hence the population has learned not to rely upon it to resolve them.

3. Even if medical care systems were redistributed into scarcity areas, they would find that their current armamentarium of *nostra* would render them unable to deal with the root health problems of the population, hence would largely spend their efforts without much alteration of the overall health status of their intended beneficiaries.

It is the contention of this paper that these patients have something very useful to say about the organization and delivery of primary care. Further, if what they are saying is not considered in the development of new health policies, it is highly doubtful that the priority set forth in Section 1502(1) of the Act will ever be met.

The Underserved Populations

There appears to be a correlation between a patient's acceptance of the medical care system and his social standing as determined by such characteristics as income, education, ethnicity, residence, and employment. A large proportion of the underserved population is poor and non-white, Chicano, black, and Asian. If we look at patients from this population we can make a few generalizations:

1. There are barriers inherent in the organization of medical care

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delivery which keep these patients from utilizing it. These barriers, as has been said, are economic, cultural and social.

2. Because of these barriers, these patients have had to develop their own ways of handling illness and health.

3. Many of the options that they have explored and currently utilize do not have the sanction of organized medicine (folk healers, curanderos, root doctors, granny midwives, herbalists, acupuncturists, chiropractors, homeopathic healers, etc.).

4. Since their efforts to ensure that "something is done" often take them outside of standard medical practice, they have not been well prepared for acceptance of standard medical care approaches.

5. When such patients do appear on the doorstep of organized medicine, they are likely to be problem patients as they are poorly prepared for the appropriate patient roles. This is evidenced by non-compliance and erratic utilization patterns.

6. Because medical interaction tends to be less than totally successful, the patients are rather dubious of the ability of medical care to properly address their needs, and medical care is dubious about their ability to function properly.

It is often assumed, as it is in the Act, that if patients were properly educated about the use of medical care they would be able to fit into standard models of patient behavior and would cease to be underserved. This assumption, however, is not totally warranted.

There has been in the past decade a noticeable movement away from standard medical models at the higher end of the social standing scale, particularly among younger persons. Such patients have become interested in the achievement of health through more holistic approaches involving shifts in life style. They are remarkable in that at one time they accepted the medical model but have subsequently decided that their definitions of health, illness and appropriate treatment include more than standard medical care.

Community clinics, often called free clinics, have a rather unique history, springing up out of the desire of the underserved population to establish some form of health care which is accountable and acceptable to it. While they are far from perfect, they have done an admirable job of translating an underserved community's definitions of quality health care into structures for delivery and accountability.

In order to get a better picture of this rather amorphous grouping of deviant delivery systems, it would be useful to list some of their major characteristics.

1. Mandate. Their mandate comes from within a particular patient group and not from outside. In this sense, community clinics are not Neighborhood Health Centers. Indeed, some clinics see themselves as opponents of these Centers which in their view are simply part of another

large governmental program which receives its mandate from outside the community, and which is destined to fail.

2. Development and evolution. They tend to evolve rather organically rather than develop as the result of extensive planning. Some are almost inimical to the notion of planning, as much of their experience with OEO-type poverty programs has convinced them that a great amount of time and money is spent which never seems to result in material benefits for the community.

3. Individuality. Each clinic is the result of a unique history with a fairly unique body of patients behind it. Rather than striving for uniformity, most such clinics strive for that form which best serves their patient population.

4. Independence. They are so fiercely independent that not only do they generally tend to reject attempts by "outsiders" to organize or control them, they often find it difficult to develop organizations between themselves. Part of this independence derives from a fairly justifiable paranoia.

5. Consumer control. This is an ideological basis for community clinics if not a structural one.

6. Very short life. While it is not possible to gather figures, from a limited experience with a number of clinics it would seem that the life of most is about one year. A very few survive beyond that, and those which do often have a rapidly changing structure and high personnel turnover. Yet, this handful has learned some very useful lessons.

New Approaches to Health Care

While trying to develop programs which are responsive to a community's needs which at the same time will have a reasonable chance of surviving in the medical-political environment, many clinics have taken new approaches to old problems. Sometimes these approaches were calculated, sometimes they were chanced upon, sometimes they were developed out of existing knowledge and sometimes they were developed out of ignorance (in which it was not known that something could not be done, so it was done). It will be instructive to examine these new approaches, for they reveal some insights into how underserved populations would like to see medical care organized.

1. New definitions of health and illness. These ideas form the core of community clinic ideology, although they have not been formalized to any great extent. The basic definition is a holistic one, and is composed of the following notions:

—Pathogenic location. In dealing with health and illness, the pathogenic location must be expanded to include elements outside the

individual.¹ This sets clinics apart from the medical model definition which places the pathogenic location inside the individual at a microbiological level.

—Multiple causation. The causes of an illness are likely to be social, cultural, political and economic in addition to microbiological.

—The relation of power to health. Borrowing from Dubos, albeit unwittingly, many clinics feel that a person is healthy if and only if that person has the power to cope effectively with his or her environment. When expressed in the patient-practitioner relation, this often results in an attempt to demystify the medical-care encounter so that the patient has a significant amount of decision-making power in the choice and evaluation of an appropriate treatment.

—Less reliance on the purely technological aspects of medical care to achieve health and a corresponding emphasis on the use of lifestyle to attain that elusive end.

—Distribution of resources. The same effort and energy should be put into studying and alleviating the ill's which afflict the communities served by these clinics as go into the ill's afflicting medically well-served areas. This would usually translate into more attention on ambulatory and outreach care and less on more expensive, resource-absorbing tertiary care.

—Pluralistic approaches. These clinics often feel that the more types of clinics there are to serve a community, the better. In diversity there is thought to be virtue.

—Small and less is better and more. Very few community clinics see themselves becoming large medical corporations, not out of thought that they would be unable to grow that large, but out of an ideological commitment that largeness in medical care beyond a certain point is detrimental to the human relation so intimately involved in the healing act.

2. Definition of "appropriate" health activities. These activities are dependent upon a clinic's notion of what health is. By expanding the scope of the pathogenic location to include areas outside an individual, a clinic often has two levels of activity:

—The individual level. Given the notion of multiple causation, there are multiple interventions which can be used. The clinics are attempting to develop non-standard approaches in responsible ways, using non-standard personnel such as nurse practitioners and para-medical personnel, folk healers such as curanderos, root doctors, medicine men, midwives; traditional therapies such as folk medicine, spiritual healing, acupuncture, and herbalism and new types of therapies such as biofeedback, meditation, diet, and other lifestyle approaches.

1. Hayes-Bautista, D. and D. Harveston: Community clinics and holistic health: the re-emergence of an ideology. *Sched. Social Policy*, January 1977.

—The institutional level. The holistic notion of health holds that individual illness may be a reflection of societal illness or strain. The causes of an illness may be diagnosed as economic, educational or political in nature, as exemplified in employment or housing. This means that interventions must be chosen which influence the institutions which have to do with these causes. A health activity might include suing an employer to correct unsafe working conditions, positive pressure on a housing agency to enforce standards, organizing parents into action at the local P.T.A. or running checks on the quality and price of foods in the local markets.

3. Governance. Who sets the policy for a clinic, and whence do they derive their legitimacy? Who enforces policy? What is the relation between the policy-setting bodies, the administrative and service workers, and the general clientele? Many clinics have felt that the poverty-program approaches to governance were morally and politically bankrupt, designed to co-opt honest opposition, and that standard governance in medical institutions is hopelessly inappropriate for small, community-sensitive ambulatory care facilities.

4. Personnel. The problem of the proper division of labor is complicated by the strongly held notion that hierarchy should be as responsible as possible, yet as low in profile as possible. Relations between professionals, service workers and administrative personnel must be worked out within that notion, without resorting to wholesale unionization, which is often seen as a failure to adequately address the issue, or wholesale adoption of current administrative and managerial structures. The issues of wage differentials, job satisfaction, accountability, mobility, permanence and education are being handled in many different ways with varying degrees of success.

5. Clientele. Approaches to the patient group being addressed include:

—Definition. A clinic will often define its target group in terms different from those used by governmental agencies.

—Acceptability and attraction. The clinic should be acceptable to its clientele on its own grounds, and attractive to it from its own standpoint.

—Involvement. The patient should be involved in the organization, governance and evaluation of the clinic as well as in the therapeutic encounter.

—Respect for the patient's world. If the patient holds notions of health and medical care which are quite at odds with those held by the delivery organization, it should not be expected that the patient must unilaterally drop his or her views and adopt those of medical care. Rather, both the patient and the institution should share their views in order to eventually create a more comprehensive definition of health and related activities for both.

—Responsibility and accountability of the clinic to the patient and of the patient to the clinic should become more explicit.

6. Financing. Because these clinics are not part of the Federal system of poverty clinics, they have often developed a great deal of flexibility, insight and expertise in financing. Often their financial backing is pieced together from a number of sources. The financial philosophy of such clinics may be summarized as follows:

—The financial burden on the patient should be minimal, if not entirely eliminated.

—A minimax game must be played with outside resources. Funding must be sought so that the clinic's autonomy is maximized. The development of different strategies to adhere to this financial philosophy has resulted in some new definitions of the financial relations between the patient and the clinic, and between the clinic and its medical-political environment.

7. Medical politics. The clinics often provide a refreshingly new micro-level view of this confusing area of conflicting interests. These new views include new definitions of who the players are in medical politics, the political games being played, the rules of these games, the strategies and tactics employed, the arenas in which the games take place, and the ultimate ends of these activities and their influence on health care.

Theoretically, the community clinics may be said to be operating from a basis of conflict theory, and standard medical institutions from a basis of order theory.

Overall Policy Implications

What does standard medical care have to learn from these deviant delivery systems? It is nearly sociologically axiomatic that information gathered about a deviant group tells as much about the larger society which labels the group as deviant as it does about the group itself. In examining these delivery systems, questions are raised about larger national health policy which might affect everyone. Some of the major policy questions are these:

1. Definitions of health and its organizations. Will this country be any healthier after a massive (perhaps economically fatal) increase in current medical care practices? Are there other directions into which energy and money should be channeled in order to achieve a healthy population?

2. Education and manpower. If new definitions of health and appropriate activities develop, who will actually serve clients? What skills will they need? How and where should those be learned? Which new professional groups would develop and how would they relate to pre-existing ones? How will they be licensed and regulated? Or should there be licensure and regulation?

3. Financing. Should non-direct care be financed as a service? For example, if a clinic brings suit against a factory to correct unsafe working

conditions, should the cost of that action be reimbursed on some par with physical examinations given at the same time by the same group?

4. Distribution of resources. How are limited resources to be allocated within the medical care system? Who should receive priorities, and for what services?

In the past, many community clinics have felt that planning agencies were antagonistic to them and their goals. Given the benign neglect and sometimes active opposition of many planning bodies, this feeling has had some justification in reality. Because of this, all parties have suffered.

By obtaining the involvement of community clinics in Health Systems Agencies, the Agencies can see that the clinics' rather different definitions and approaches are placed in the marketplace of ideas for the enrichment of all planners and administrators.

ABSTRACT: If multi-institutional arrangements are aimed at containing costs, savings will ensue after a start-up period and these can be passed on to the service population. However, nonprofit hospitals tend to compete by increasing in size, technological sophistication and prestige by providing more thorough and expensive care. This, coupled with cost reimbursement by third-party payers, provides little reason for providers to hold down costs. Recent key reports are reviewed describing progress towards multi-institutional arrangements and listing some of the problems which are encountered in this process.

"Sec. 1502. The Congress finds that the following deserve priority consideration in the formulation of national health planning goals and in the development and operation of Federal, State, and area health planning and resources development programs: . . . (2) The development of multi-institutional systems for coordination or consolidation of institutional health services (including obstetric, pediatric, emergency medical, intensive and coronary care, and radiation therapy services) . . . (5) The development of multi-institutional arrangements for the sharing of support services necessary to all health service institutions . . ."

Section 1502(2) and Section 1502(5) Multi-Institutional Systems for Health Services and Support

James O. Hepner, Ph.D.*

There are numerous multi-institutional arrangements and types of shared services used in the delivery of health care. This paper reviews some recent key reports on this subject. While attention is focussed largely on activities involving hospitals, it is recognized that multi-institutional systems and shared services may involve many other types of institutions, such as skilled nursing facilities, intermedite care facilities, halfway units and ambulatory care resources. The development of such systems and shared services may also affect relationships between the institutions and such community agencies as health departments, visiting nurse services, and social, rehabilitation and related service agencies.

In a survey of short-term community hospitals made in 1971, 66.6 percent of the hospitals responding reported that they shared from one to 73 services, with an average of 6.2 per hospital.¹ Of the 73 services listed, five most frequently shared were blood bank, purchasing of medical/surgical supplies, data processing, disaster plans and professional staff in laboratories.

The trends toward multiple hospital arrangements have been succinctly outlined by Brown and Money.² First, the approach toward sharing continues to grow and is shifting rapidly to contract management by both non-profit and for-profit organizations. Second, it appears that the voluntary, non-profit and for-profit organizations. Second, it appears that the voluntary, non-profit hospital has continued to expand shared services since it has the economic advantages of scale and specialization. Third, hospitals and hospital associations are continuing to spread the management cost of shared services programs among their participating membership. Fourth, mergers and strong affiliations seem to be continuing among institutions under various types of sponsorship where there are overlapping patient markets. Fifth, the practice of building satellites or branch hospitals remains an attractive possibility for many individual hospitals whose financial base may be becoming eroded through the population shift from inner cities to suburbs. Sixth, the church-owned multiple hospital operations seem to be regrouping and

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1. Astolfi, A. and L. Matti: Survey promises of shared services. *Hospitals* 46:18, September 16, 1973.

2. Brown, Montague and William H. Money: The promise of multi-hospital management. *Hosp Prog* 56:8, August 1975.

developing a strategy to attract Federal financing and other resources that their previous organizational arrangements would not allow them to receive. Seventh, medical schools and teaching hospital affiliates appear to be changing somewhat in regard to a shift in the philosophy of medical education. This change is apparent where a larger clinical base is needed to include primary and secondary care facilities to support educational and research interests of the medical center. Such approaches as the Kaiser-Permanente program which includes group practice, prepayment and group hospitals are an example of a fully integrated system providing service to selected subscriber groups. The American Hospital Association has identified 350 multiple unit systems excluding the Federal hospital systems.³

The Congress has expressed its interest in encouraging shared services in priorities 2 and 5 of Section 1502 of the 1974 Planning Act. This reflects not only a concern with the rising costs of hospital care but with quality and access as well. Plainly there is need in urbanized metropolitan areas for a better balance in systems of central core-suburban-peripheral institutions.

Types of Arrangements

Edwards⁴ has classified the various procedures of providing service as follows: First, *referred service* is a service maintained by one member or a group of health care institutions. Usually it is based upon an informal agreement rather than a legal contract and referring institutions rarely assume direct responsibility for operating the service. The member institution providing the service bills patients directly for services received. For example, one institution without obstetrics or emergency services may refer these patients to another member institution.

Second is a *purchased service* for which an institution pays directly. If through this arrangement a purchased service is provided for patients, the institution will usually bill the patient directly and then pay the supplier itself. The supplier may be another health care institution, a commercial service firm or a medical service corporation; an example would be tests purchased from a commercial laboratory, or radiology services purchased from an independent source.

Third is a *multiple-sponsored service* in which a group of institutions jointly controls and operates the service. Through such an arrangement there is agreement between the hospitals or through a separate corporation whose board includes representatives of these sponsoring institutions. Multiple-sponsored and shared services are usually arrived at through a legal agreement which includes purpose, method of administration, legal responsibility, financial support for the services, and any special obligation of the sponsoring hospitals.

3. For a detailed explanation and discussion see M. Brown and H. L. Lewis: Hospital management systems: Multi-unit organization and delivery of health care. Aspen Systems, Germantown, Md., 1976.

4. Edwards, S. A.: Guidelines for health services R & D: Shared services, DHEW Pub (HRA) 74-3023. U.S. Government Printing Office, Washington, D.C., 1974, pp 5-6.

Fourth is a *regional association service* sponsored by an association of institutions such as a metropolitan hospital association.

These four categories reflect different types of control of shared services and may not be sharply differentiated.

Edwards has further reported⁵ that institutions share services for several reasons including improved and extended educational programs; elimination of unnecessary duplication of facilities and services; improved planning; increased community support; improved internal management; long-range services; increased operating efficiency; modernization or replacement of obsolete facilities; purchases of capital-intensive, sophisticated equipment; operation of special care units; and increased quality of patient care.

Management contracting has become popular as one multi-institutional arrangement. It began when expensive and complicated computer and data processing technology for tighter cost and quality control led to early shared services in contracting out the management of such services. The contract management of accounting and finance operations, engineering services, rehabilitation and physical therapy, pharmacy, housekeeping, laundry and dietary has continued to grow.

In a study of contract management services which is now underway, Brown⁶ is attempting to identify the situations under which hospitals enter into such agreements. Preliminary work has suggested the following: chronic low occupancy; deficit operations; rural or inner city locations; changing clientele with increasing medical needs and reduced ability to pay for such services; geographic areas where it is difficult to attract skillful and trained administrators and physicians; new suburbs without a well-developed social group to pursue community needs aggressively and furnish initial capital; new towns; very small hospitals, up to 200 beds; older hospitals; established, well-run organizations wanting more depth in management services; trustees no longer wishing to cope with the complexities without assured support in every area; and physicians desiring a greater management resource because they do not fully trust the local administrators.

Another arrangement gaining momentum is health service consortia. These arrangements between hospitals and other providers such as medical schools serve primarily as joint planning bodies for their affiliates. In effect, provider organizations with overlapping missions and service areas agree on future service and roles for each member of the group. Usually they have criteria, such as \$100,000 project size, and procedures to decide which projects will be brought to the consortium for joint consideration and decision. The consortia frequently gain agreement that all members of each medical staff will have privileges in each member institution. High cost medical services programs thus can be allocated more rationally within the service area of consortia member institutions. Early results suggest that consortia offer superior advan-

5. *Ibid.*, p 29.

6. Brown, M.: Multiple-unit hospital systems under single management. *Hospital & Health Services Administration*, Chicago, Spring 1976, pp 90-91.

tages in areas with many large institutions which must sort out their respective roles to control costs and offer high quality service. Consortia may lead to mergers as institutional members learn to plan and work together. They also offer medical schools an opportunity to associate with additional institutions to expand the clinical medical education base.⁷

The Pros and Cons of Shared Systems

What are the factors that seem to motivate hospitals to merge or to become a part of a multi-institutional system? Community hospital objectives include minimizing cost and maximizing output, quality, profit, utilization, and physician income and/or productivity. Considering the basic objectives, one may assume that hospitals merge to realize the economy of scale by growth; to acquire a better spatial allocation of services and resources; to provide services to members of the community or segments of the community that otherwise could not afford them; to promote the self-interest of managers of a hospital (Board of Trustees, Medical Staff, Administrator); to dominate the industry locally; to take advantage of tax laws; and to provide greater influence upon local governmental legislation and regulation through strong lobbying.⁸

One of the main disadvantages to an institution participating in a shared service program is loss of administrative control. A problem that seems to be more imagined than real is the concern over the institution's loss of prestige. There is concern over standardization of certain supplies, processes, and equipment. In addition, there may be some feeling of loss of community input and a lack of responsiveness of suppliers to the needs of the individual hospitals in favor of the total "system" needs.⁹ Local hospital boards want to maintain autonomy, the medical staff fears that it will lose control over its own practices, and administrators fear for their jobs, loss of autonomy, and diminution of status.¹⁰

Another disadvantage of merged system arrangements is encountered when the weaker units are in financial difficulty and/or have low quality standards. The resultant feeling by those associated with the stronger institutions is that their revenue and resources are being depleted to bring the other units up to standard.

A major disadvantage that will need to be resolved regards the Internal Revenue Service. Through an IRS ruling, if one exempt hospital establishes a separate corporation to provide services to it, the corporation will not be precluded from exemption under Section 501(c)(3), because the provision of such services for the parent hospital is an integral part of its charitable activities. This assumes, of course, that the activities of such a corporation are indeed an integral part of its

7. Brown, M.: Telephone interview with author, May 3, 1976.

8. Cooney, J. P. and T. L. Alexander: Multi-hospital systems: An evaluation, Part I. Health Services Research Center of the Hospital Research and Educational Trust and Northwestern University, Chicago, 1975.

9. Edwards, op. cit., p. 27.

10. Brown, op. cit., pp. 10-11.

charitable operations. The IRS's position, however, is that if two tax-exempt hospitals establish a single subsidiary, the subsidiary is not entitled to exemption because it is carrying out an unrelated trade or business. This ruling was made specifically in regard to the laundry services of hospitals. The IRS apparently refused to recognize that under ordinary circumstances any profit derived by this subsidiary would be returned to the parent organizations in proportion to the volume of business done with each parent. The reader is referred to Bromberg for an in-depth discussion regarding this matter.¹¹

Further advantages to an institution in sharing services and providing for multi-institutional arrangements, some of which have already been stated are: there is a reduced capital outlay, there is opportunity for extended scope and improved quality of services by more effective utilization of personnel and facilities, and there is the potential for eliminating duplication of facilities. With the ever-increasing explosion of medical scientific knowledge and its dissemination throughout the industry, there is evidence to indicate significant underutilization through duplication. Well-known examples are open heart surgery facilities, special therapy units, and most recently the use of computerized axial tomographic total body scanners. In addition, there is the opportunity to contain operating costs through improved organization, economies of scale, and more efficient use of specialized personnel and equipment. There is improved ability to conduct research and long-range planning which may include such activities as more extensive reports for improved management control, special research projects to consider improved methods of providing services, and comprehensive, long-range planning projects.

A Case History

A revealing study by Treat points to the independent variables of population size and hospital bed size influencing hospital mergers.¹² Essentially, using hospital merger to improve efficiency and effectiveness does not succeed in all situations. Caution is urged especially in hospitals over 300 beds and in Standard Metropolitan Statistical Areas of less than 300,000 population. The investigative results support small non-SMSA hospital mergers. However, Treat encourages caution, for mergers of large short-term urban hospitals do not seem to be a promising answer to their financial problems. Also, in the larger urban hospitals seeking better economics of scale through merger, a great deal of initial cost and expense are prerequisites for increasing the service capability of those hospitals involved. The following case history seems to verify some of Treat's findings.

Cooney and Alexander¹³ have presented the major findings, conclusions, and recommendations resulting from studies of one multi-hospital

11. Bromberg, R. S.: The effect of tax policy on the delivery and cost of health care. Commerce Clearing House, Chicago, August 1975.

12. Treat, T. F.: The performance of merging hospital. *Med Care*: 14:3, March 1976, pp 199-209.

13. Cooney and Alexander, *op. cit.*

system, Samaritan Health Service, Inc. in Phoenix, Arizona. These studies, conducted over the past few years, covered several major subject areas including organization, cost, comprehensiveness, availability and quality of care, acceptance, and rural hospitals. Comparative organizational cost studies were also made with other multi-hospital systems.

Findings resulting from the analysis of the organizational structure, process and management of the multi-hospital system indicated that management personnel employed by the largest hospital in the system studied perceived the merger in the short run to have had a number of negative effects on their jobs and their hospital's organizational relationships. Management personnel employed by the five smaller hospitals in the system perceived some positive effects from the merger. The conclusions indicate that the alienation by the staff of a larger hospital after the merger was reflected in loss of autonomy, responsibility, and sense of accomplishment. In addition, the larger hospital was treated unfavorably through the merger when revenues were used to improve the smaller hospitals in the system rather than to maintain and upgrade the larger hospital's services. It is suggested that future economic studies of multi-institutional arrangements should be supplemented by supporting analyses of such administrative and personnel concerns as alienation.

One recommendation suggests that when hospitals are brought together to form a multi-hospital system, expectations concerning short-run problems should be realistic. If personnel are advised that it may "take a while" before they see the benefits of the merger, they may not become frustrated when the merger does not solve all the problems at once.

In making a comparative economic analysis of multi-hospital arrangements, systems managers should be aware that the hotel-service area is the most fertile for cost saving because of its adaptability to labor saving technology, the high utilization of supplies purchased in bulk, and the low level of potential conflicts of interest which might result in opposition to organizational change. Another point is that shifts in the hospital power base, owing to the formation of the multi-hospital system, may motivate the physician to change his clinical behavior. If appropriate he may adopt measures to reduce his patient's length of stay.

Establishing A Shared Service System

Edwards¹⁴ has reviewed the several steps necessary to develop a shared service system. These are merely highlighted here; a more detailed review of his work may be advisable for those who are interested in implementing a shared service.

Beginning with a preliminary analysis, Edwards suggests that an assessment of the situation be made to consider individual institutional goals since these vary from small rural hospitals to a large medical center. A study to determine what sharing opportunities or alternatives are open

¹⁴ Edwards, op. cit.

for achieving these goals is desirable to see if a comprehensive service is appropriate. It is also desirable in the beginning to establish informal contacts and relationships among management leaders of organizations where potential sharing partnerships could be developed. Key executive, medical and governing board members of hospitals need to be brought into the planning process early. Involving employees at appropriate times helps in reducing rumors and uncertainty. Contacting potential participants, reviewing physical data, and having a preliminary consultation are necessary components in investigating sharing alternatives.

A decision to undertake a focused analysis will require both external and internal public relations activities, open and honest commitment to the project, and a definition in real terms of the results which are anticipated through a shared service. At this stage a major step must be taken to formulate criteria for sharing feasibility, to consider the possibility of outside consulting services, and to plan a detailed analysis. An evaluation of alternative systems of sharing services and an additional feasibility study may be necessary at this point.

The environment needs also to be explored to determine the capital investment requirements, operating cost, quality or comprehensiveness of service, accessibility of service to the community, attitudes of medical staff, hospital employees, and other interested groups, and legal questions pertinent to the service. Major supporting services and operative constraints such as adequacy of accounting systems, provisions for changes in a program once it is established, and liabilities created or altered by a shared service program may well be considered. Information also needs to be gathered on service levels, operating costs, capital costs, operative constraints, and personnel considerations. Major cost components for analysis include manpower, materials, depreciation, interest charges, debt service, plant overhead, administrative overhead, services obtained from other hospital departments, miscellaneous indirect costs, capital expenditures including equipment and expansion, and taxes. External factors such as wage and price variation, changes in patient load, changes in patient mix and type of medical care offered should not be overlooked.

It is necessary also to determine the organization of sharing alternatives including the method of administration, the functions to be shared, growth and change in services, and participant changes.

Further, it is important to project the expected results of the sharing alternatives. This is desirable so that each alternative (including a continuation of the present system and any contingency situation) may be identified in the feasibility study. It would be desirable to compare the projected performance of the shared service alternatives with sharing criteria that had previously been established. The decision point is then reached as to whether to proceed or not to proceed.

The implementation stage of a shared service may prove to be the most facile or the most difficult stage of the entire shared program. If it has been decided, for instance, to share a CAT Scanner or obstetric service, orientation must be toward a different set of individuals and activities

than those which would be involved in sharing a supportive type of service such as group purchasing. A comprehensive and detailed evaluation plan needs to be developed if the objectives are to be met within the limits of time, expense, and quality.

In the evaluation of the project, certain key questions must be asked. How is patient care being affected? Will the capital investment be as anticipated? Will the administrative structure of the shared service be adequate? Are employees, staff, and physicians accepting the new system? Are transportation and information flow mechanisms satisfactory? Will operating costs be affected? Is quality control acceptable?

The Future For Multi-Hospital and Shared Services Systems

Brown and Money¹⁵ have indicated 19 trends that may be forthcoming over the next decade:

1. Contract management arrangements will grow rapidly, especially while capital shortages for outright ownership continue.

2. Voluntary nonprofit institutions with strong management will enter the contract management arena working outward from their "mother" hospital base.

3. Shared service organizations will grow, bringing more specialized management and services to single and multiple systems under partial contract management arrangements.

4. Shared service organizations will develop sufficient corporate expertise to enter the total contract management field as a major competitor with both voluntary nonprofit multiple hospital systems and investor-owned systems.

5. Religious-owned systems will centralize many of their corporate functions to achieve the economies currently being realized by other systems.

6. Religious institutions will continue to "scale down" the extent of their losing services while making more explicit choices about where to incur losses in order to serve the community.

7. Planning agencies increasingly will support and advocate the use of multiple system services, ownership, and management.

8. Communities seeking intervention from outside will favor, in descending order, very sound management, the organization which offers the least movement of capital from the area in both the short run and long run, and the most flexible approach to providing for community health needs.

9. All systems will seek the most accurate estimate of the useful (economically viable) life of facilities and services and will reconsider facility needs in light of ambulatory care and Health Maintenance Organization development.

10. Within a decade or so many present satellites will become the capital and service intensive hospitals of their systems.

15. Brown, M. and W. Money: Implications of multi-hospital management for Catholic hospitals. Hosp Prog 56:9, September 1975.

11. Flexibility in future use of units will be built into the planning of takeovers, contract management, and new unit construction.

12. Hospital and other types of management consulting firms will enter the contract management arena. They bring financial management, planning, rate review, and other control mechanism expertise to their existing capabilities for building.

13. Horizontal systems will develop extensively during the next five years. As HMO experience is acquired, they will begin to emerge as vertical health care delivery systems.

14. Physicians will be included in systems planning at two levels: at the local hospital or unit level to determine health care needs and at the corporate level to determine unmet markets and total systems' responsiveness to environmental changes.

15. Local Health Systems Agency boards will have greater representations from multiple hospital systems.

16. Systems will recognize the need for their management resources and comparable health statistics data in the public health field and will begin to contract with cities and states to manage public health functions for governments.

17. Systems will begin to purchase and control health suppliers as they are forced by government controls to reduce costs and reduce the uncertainty in their environments.

18. Systems will develop new managerial capability to deal with broader problems where solutions can be standardized. Control functions will include: indepth operational knowledge of operations, an external political department at the chief executive level, highly specialized professional help, and labor negotiations.

19. Medical schools will begin to affiliate with systems because of their high referral potential and ability to provide community training.

Implementing The Guidelines

In preparing this paper, discussions were held with a number of resource persons in the health field. These discussions brought out some of the important elements in implementing guidelines and the planning process, such as the needs for flexibility and latitude, respect for ownership rights, and protection of institutional, managerial and professional prerogatives. However, the most important consideration to keep in mind is that provider legitimacy and mandate for action have traditionally come from the support of citizens who are consumers of the services. Consequently, any prerogatives taken by providers must reflect the desires of their constituents. This consideration has special significance because organizational boundaries do not coincide with the designated Health Service Area. Local HSA's and area-based multiple regional arrangements, both non-profit and for-profit, should use to their advantage the existing organizational capacities for management support and ancillary as well as clinical services.

A related set of considerations involves the use of incentives for entering into arrangements for giving up, adding, or jointly providing

programs of service. In the last analysis, plans for service delivery can only be implemented by providers who have the legitimate constituency and who reflect accurately the community's interests. Guidelines for coordination and consolidation must also include appropriate incentives for institutional and professional providers. Furthermore, development of multi-institutional arrangements must establish centers of responsibility and accountability as close as practicable to the sites of health service delivery.

Briefly stated, the key elements in these considerations are:

1. Local determination of goals and standards for health service delivery.
2. Inclusion of essential input in the process of goal and standard setting, and in organizational development for implementation.
3. Latitude and flexibility in structuring multi-institutional arrangements.
4. Incentives for entering into such arrangements which are compatible with the legitimate interests and prerogatives of providers as reflected in their constituency groups.
5. Assurance of accountability to the public in any arrangements for consolidating and coordinating resources for service delivery.
6. Assurance of clinical and cost effectiveness through physician and patient acceptance of coordinated and consolidated multi-institutional arrangements.

It is difficult to couch these concerns in a way that fits the format of goals and standards, especially in quantitative statements. The dilemma is that any attempt to be reasonably specific introduces the threat of imposing an unwanted constraint.

Conclusion:

It is apparent that nonprofit hospitals tend to compete by increasing in size, in technological sophistication, and in prestige by providing more thorough and expensive care. Such an incentive structure reinforced by government and private health insurance on a cost reimbursement basis, encourage greater quality of service rather than efficiency. Thus, there is little reason for providers to hold down spending. Another major factor in rapidly rising health care costs is the extent to which the physician determines the required amount of his or her services, diagnostic tests, therapeutic procedures and drugs, as well as inpatient hospital care.¹⁶

Regulation regarding multi-institutional systems for health services and support under Public Law 93-641, Sections 1502(2) and 1502(5), should encourage local advisory boards to take primary responsibility to involve the local community in the affairs of the hospitals. Advisory boards can assess community health requirements and lend legitimacy to the clinical services and programs provided by the individual hospital units in multi-hospital systems. There are initial costs in newly formed

16. Council on Wage and Price Stability. Unpublished. Reported Washington Post March 19, 1976, p A 10.

multi-hospital systems that are higher than in individual hospital operations for from two to four years. If cost containment is not considered as a goal, unjustified expense may result through short-run monopolistic situations. With cost control goals, savings can be passed on to the system's service population after the start-up period of time. While system-wide medical staff privileges do not mean that physicians will practice in all of the member hospitals, there will be greater peer interaction, expansion of outlook toward the system concept, and greater participation by doctors in multi-hospital resource allocation.

Finally, the age of the multi-hospital system is important because newly formed systems experience a period of organizational trauma. As the system matures, it operates more smoothly.¹⁷

17. Alexander, T., W. Money and T. Beatzoglou: Multi-hospital systems may offer solutions to delivery problems. *Hospitals*: 50:21, November 1, 1976, p 75.

ABSTRACT: The group practice concept is emerging as one of the most important organizational changes taking place in ambulatory care. A number of actions are proposed by which area health planning agencies can encourage their further development in the interests of equal access, quality of health care, and cost containment. Among these are the encouragement of group practice development through the provision of low cost start-up loans, the development of favorable State and Federal legislation, the encouragement of hospitals and universities to develop group practice programs, especially for rural areas, and the promotion of JCAH accreditation, PSRO and HSA reviews.

"Sec. 1502. The Congress finds that the following deserve priority consideration in the formulation of national health planning goals and in the development and operation of Federal, State, and area health planning and resources development programs: . . . (3) The development of medical group practices (especially those whose services are appropriately coordinated or integrated with institutional health services), health maintenance organizations, and other organized systems for the provision of health care . . ."

Section 1502(3)

The Group Practice of Medicine: Some Implications for Health Planning

John E. Kralewski, Ph.D. and Roice D. Luke, Ph.D.*

Recent trends indicate a pattern of increasing acceptance of group practice as an organizational mode for delivery of health care. As indicated in the accompanying Table, there were 1,546 group practices and 13,009 physicians in group practice in 1959; by 1975 this had risen to 7,733 practices and 59,809 physicians.¹

Another and perhaps more important indicant of the increasing acceptance of group practice is the proportion of physicians practicing in groups. The numbers (as a percentage of non-Federal physicians in the United States) were 8 percent, 15.6 percent, 17.6 percent and 23.5 percent in the four survey years of 1959, 1965, 1969, and 1975.²

The increasing level of physician receptivity to group practice is further shown in the results of a survey of patterns of medical practice conducted by *Medical Economics*.³ This revealed that in 1972 only 49 percent of office-based doctors under age 65 considered themselves to be in solo practice. The other 51 percent, although not necessarily in fully-formed groups, had nevertheless associated with others sufficiently to report themselves as "not in solo practice."

Trends in the mix of physician specialties in groups are also shown in the accompanying Table. In this Table, single specialty groups are composed of physicians representing only one of the many specialties (except that of general practice); multispecialty groups include two or more medical specialties; and general practice groups are composed solely of general medical practitioners. In general, the multispecialty group is the more complex of the three as it integrates several specialties and provides services to a more variable mix of patients.

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1. 1975 data from special tabulations performed by staff of the Center for Health Services Research and Development, American Medical Association, Chicago. Previous surveys have been published as follows: 1959: Medical groups in the United States, Pub'c. Health Service. PHS Pub 1063, U.S. Government Printing Office, Washington, D.C., 1963. 1965: Balfe, B. E. and M. E. McNamara: Survey of medical groups in the United States. Department of Survey Research, American Medical Association, Chicago, 1968. 1969: McNamara and C. Todd: A survey of group practice in the United States, Am J Public Health 60:1303-1313, July 1970.
2. Center for Research in Ambulatory Health Care Administration: Organization and development of a medical group practice, Part 1. Medical Group Management Association. Denver, 1975.
3. See in particular *Medical Economics* October 15 and November 26, 1973. For a brief discussion of this survey, see Pollack, J.: Grouping of Medical Practice in Community hospitals and the challenge of primary care. Center for Community Health Systems, Columbia University. New York, 1975. pp 39-40.

Table. Group practice in the U.S.: by type of practice.

Survey year	Total	Single specialty	General practice	Multi-specialty	General practice & multi-specialty
— Number of groups —					
1959	1,546	392			1,154
1965	4,289	2,161	651	1,477	2,128
1969*	6,162	3,252	758	2,152	2,920
1975*	7,733	4,194	826	2,713	3,539
— Number of physicians —					
1959	13,009	1,562			11,447
1965	28,381	8,956	2,284	17,141	19,425
1969*	38,834	13,447	2,612	22,775	25,387
1975*	59,809	21,089	3,540	35,180	38,720

* Adjusted

Source: 1959 data, U.S. Public Health Service. Other data, American Medical Association; 1975 data in press.

Increased Productivity from Group Practice

Although productivity measurements in ambulatory care are not well defined and enjoy little consensus, it can still be said that group practices provide a highly favorable organizational framework and scale of operation for division of labor, substitution of manpower and substitution of capital for labor to increase the efficiency of the production of services. Although there is much variation, depending on the type and size of practice, scope and demand for services, and managerial capabilities, most studies agree that group practices can and often do show increased productivity over the solo practice of medicine. The contradictions in research findings regarding these issues most probably stem from different value orientations of the researchers and from the fact that most of the research fails to differentiate adequately the multi-product functions of group practice and to relate productivity to these different organizational forms. Notwithstanding these weaknesses in the research and the conflicting findings regarding efficiency and productivity of group practices, the conclusion is clear that this type of practice offers a potentially effective organizational response to the provision of ambulatory care in today's medical care setting.

Productivity is certainly an important consideration but even more important is the integrative capacity of the group practice concept. Faced with an ever-expanding array of specialized and diversified ambulatory and inpatient services, consumers will probably place this function above all others in the future.

While the debate over the merits of group practice is likely to continue, few would argue that this uniquely American way of dealing with ambulatory care does anything but improve accessibility and accounta-

4. Graham, F. E.: Group versus solo practice: arguments and evidence. *Inquiry*, 4, June 1972.

bility over the solo practice of medicine. Group practices in general provide a broader range of services, accessible through a single well-defined point of entry where, as one author states it, "personal medical care needs can be attended to in a coordinated and convenient manner."⁴ As the health care field becomes increasingly more complex through technological development and task specialization, this integrative contribution of group practices will assume an importance beyond that recognized in today's setting. The larger multi-specialty groups, in which specialists work with the generalist physician, provide highly integrated and readily available family health care regardless of the time of day or the day of the week.

The close association of physicians in a group practice and the support provided by the organizational structure also enhance the quality and continuity of care. Many group practices have a formalized quality review mechanism and physicians practicing in groups report high levels of daily interaction on a consultative basis. In this context, group practices probably provide the most viable setting for successful implementation of the Professional Standards Review Organization program in ambulatory care. This peer review, coupled with the development of national criteria for group practice structure and function by the newly developed subsection on ambulatory care of the Joint Commission on the Accreditation of Hospitals (JCAH), denote an important milestone in the movement toward quality assurance in ambulatory care.

Concern with Efficiency

The group practice concept, consequently, emerges as one of the most important organizational changes taking place in ambulatory care, clearly paralleling the organizational changes that have taken place in other industries during the past 75 years. The manufacturing industries responded to increased technology and the resultant task specialization by forming large scale organizational structures during the first two decades of this century to integrate and streamline the productive process. In much the same way, physicians are grouping together to reduce overhead costs and maximize efficiencies of specialized talent. Unlike the manufacturing industries, however, group practices of medicine have little incentive to increase productivity unless they are located in underserved areas; consequently, group practices may tend to be unconcerned with efficiency.⁵

As a result, while physicians are forming more group practices, until recently they have not directed much attention to the managerial functions of that style of practice and, contrary to the industrial approach, tend to play down the role of administration. Group practices characteristically, therefore, are undermanaged and many overrun their managerial capability when developing satellites, prepaid programs or, in general, undergoing rapid expansion. This has been true especially of physicians

5. The development of more stringent reimbursement mechanisms and an oversupply of physicians may be changing this orientation. Three pediatric practices, for example, went bankrupt in Denver during the past two years.

who have attempted to develop Health Maintenance Organizations (HMOs); their comments, time and again, note the lack of managerial know-how as a key limiting factor.⁶

A second characteristic of group practices is that those devoting attention to administration generally concentrate their effort on productive mechanisms (often to increase free time) and the differentiation of the product line to increase income potential. Consequently, planners cannot expect system-wide integration of ambulatory services to arise from a group practice any more than they can expect such integration from the solo practice of medicine. They can, however, expect internal integration of services into a patient care product that tends, with time, to become broader in scope. Planners should, therefore, build on that strength to accomplish an integrated health care system.

This becomes increasingly important in view of the rapid change in technology and the resultant specialization in the health care field. Much has been written about the family practitioner and the move away from specialization. Most of it, however, has been written by individuals unfamiliar with organizational concepts. Certainly the generalist plays an important role as the family physician. But the complex nature of the field, and the almost certain indications that it will become more complex, strongly indicate continuation of the trend toward task specialization and product differentiation. Group practices, as noted, provide the framework for the integration of the task-oriented production side of medical practice to achieve effectiveness and efficiency while offering a broad range of coordinated services.

Group practices also provide the organizational base for satellite clinics staffed by physicians and physician extenders in underserved areas. This mechanism is especially appealing for rural areas since group practices can maximize the scarce resources available in those areas to provide broad ranges of service for the community. Two or three solo practitioners in a rural community with a corner drugstore, a small hospital, and a dentist in a private practice are dissipating the community resources; as a result, they provide only limited ambulatory services at a high community-wide cost and low individual provider profit. The high overhead and low levels of integration siphon off a great deal of money that could be used to develop a broader range of coordinated services. This loose assemblage of resources is, of course, incapable of developing outreach satellite programs for other smaller communities that lack even basic services and are unable to take advantage of physician extender programs.

On the other hand, the development of a group practice by these physicians, dentists, pharmacists, and perhaps the hospital furnishes an organizational base that will, first of all, maximize the resources available in the community to provide an expanded range of services and integrate these services into a coordinated ambulatory and inpatient care program. Secondly, this coordinated group arrangement provides the organiza-

6. Stumpf, G. and M. Garramore: Why some HMOs develop slowly. Public Health Rep November-December 1976.

tional base for the development of a different mix of talent, in which physician extenders may be utilized to provide services, and for the development of satellites in surrounding underserved communities.

The key to this concept, however, is not simply the group practice of medicine but rather the creation of group practices that are responsive to the integrative aspects of their organization. While some group practices are so oriented and employ talented administrators to carry out this function, others pay little attention to administration and the practice is conducted as a loose consortium of solo practitioners. Even those that employ administrators often limit their role to the supportive services and "business" side of the practice with little or no attention to the integrative functions for the production of services. Clearly, in order to achieve even basic comparative advantages from a group practice, the integrative (administrative) function must be accorded an importance equal to that of other basic functions of production.

This becomes even more crucial when group practices become more complex through expansion either in size or in scope of activities. A single specialty group will experience an increase in the need for coordination as physicians and ancillary personnel, including physician extenders, are added to the practice. This need is increased dramatically as different specialties are added and tighter territorial relationships are developed within a specific inpatient facility. It is further complicated by the addition of a prepaid program. Administrators must then not only coordinate tasks within specialty units (single product line) but must also integrate across specialty units to deal with the coordination of multiple product lines.

For integration to be effective at this level, the simultaneous provision of several factors would be needed. These might include physician incentives, perhaps, as contained in prepayment mechanisms; formal linkages between primary, secondary and tertiary levels of care, as well as with other sectors of the health care system (e.g., dentistry, pharmacy, preventive care, etc.); and integrated information systems, including the development of a unified patient record. In other words, integration at the level of the overall process of care requires the development of structural, as distinct from managerial, mechanisms. Less formal relationships between the various actors and components of the health delivery system may be sufficient to achieve a degree of integration. But to achieve its full potential, as reflected in improved resource utilization, quality control and access to care, the more formal mechanisms are necessary.

Continued technological expansion in the health care field and the concomitant specialization and differentiation within the delivery system have created a need for some organizational focal point to perform integrative functions. In recent years this role has increasingly fallen, by design or by default, to the community general hospital.⁷ This has occurred because hospitals have the needed organizational capacity for

7. For a reference on this point, see Center for Community Health Systems: Community hospitals and the challenge of primary care. Op. cit.

exerting leadership in this arena and because of the continuing tendency for urban populations to turn to the hospital for primary care when faced with the complexities of the ambulatory health care system. The expansion of the multi-specialty family centered group practice concept, however, may offer an important alternative to the resource intensive hospital as the focal point to achieve this integration.⁸ These group practices provide the connective link between the patient and the other elements of the health care system; they provide a point at which primary and referral physicians can be joined into a formal organizational structure, thus potentially enhancing referral and consultative activity; they possess organizational and administrative capacity; and in those cases where substitutions between sites for care are possible, they often are the least costly and more effective organizational alternative. It is clear that additional research is needed that focuses on the identification and evaluation of the integrative mechanisms both available and operative within the various forms of practice arrangements.

Recommendations: Recognizing the potential efficiency of group practices of medicine and dentistry, their increased acceptance by providers and consumers, and the demonstrated effectiveness of this mode of practice in providing ambulatory services in a more integrated and accessible manner:

1. The development of group practices should be encouraged so that by 1980 at least 25 percent of ambulatory care will be provided through this mechanism and by 1985 every consumer in communities of 25,000 and more will have the option of receiving care from this mode of practice.

2. To maximize the integrative, distributive, and quality assurance potential of group practices, they should be encouraged to employ full-time administrators whenever possible.

3. In order to maximize the integrative potential of groups, they should be encouraged to develop multi-specialty practices of medicine and dentistry, including a primary care dimension to insure a full range of services and a family care focus to provide comprehensive and continuous care.

4. In order to maximize the potential of preventive health care in increasing the effectiveness of health services and containing costs, all group practices should be encouraged to include a preventive medicine and preventive dentistry program in their practice.

5. In order to promote efficiencies in the production and utilization of services and to provide consumers with alternate health insurance schemes, all group practices should be encouraged to offer prepaid programs at least as an option to the conventional fee-for-service payment mechanisms. Health Systems Agencies should require that these programs be coordinated with preventive programs developed by local and State health departments.

8. The experiences with the British health care system reveal the problems that are the potential of a hospital-based delivery system. See R. M. Battistella: Reorganization of the National Health Service: Background and issues in England's quest for a comprehensive, integrated planning and delivery system. Milbank Mem Fund Q: Fall 1973: 489-530.

6. To assure attention to ongoing quality assessment in group practices, Professional Standards Review Organizations should be encouraged to include immediately all group practices in their review process.

7. Recognizing the effects of accreditation as a factor in upgrading quality of care and assuring compliance with at least basic community standards, all group practices should be encouraged to seek accreditation by the JCAH subsection on ambulatory care.

8. In order to provide accessible, coordinated health services in underserved areas, and especially rural areas, group practices should be encouraged to develop satellite programs utilizing physician extenders such as nurse practitioners and expanded function dental auxiliaries as the front-line providers of service.

The organizational leverage enjoyed by group practices places them in a very competitive position in the community. While this competition can lead to more responsive ambulatory care it can also lead to a proliferation of underutilized services. As noted by Allison⁹ most group practices enjoy a seller's market and, given their monopolistic position, concentrate on product development rather than market demand (or need). As a result, group practices cannot be expected to forgo the development of a specific set of services in the community. This problem is exacerbated by the profit/nonprofit, controlled/noncontrolled nature of the health field. Profit-making group practices pursuing their legitimate (and indeed laudatory) goals will likely take advantage of the controlled, noncompetitive nature of the nonprofit community hospital and will therefore duplicate expensive services that are controlled in the inpatient setting.

Consequently, planning agencies must assume responsibility for control of those services provided by group practices that are controlled by the planning agencies in the hospital setting. This will assure appropriate utilization of services community-wide and will prevent profit-making group practices from taking advantage of the hospitals' noncompetitive controlled areas in the provision of services.

Recommendations: 1. All group practices, as defined in this document, should be reviewed by the area planning agency as part of its systems plan.

2. A set of specific guidelines should be developed for use by the area planning agency in reviewing group practices. The guidelines should include criteria for establishing groups and for evaluation of ongoing groups.

3. All group practices should be encouraged to submit a long-range plan to serve as a guide for their own operations and as a necessary input in the development of the area health system plan.

4. To avoid regional proliferation of expensive diagnostic or laboratory facilities, certain services which in other sectors of the health field come under the control of health planning agencies should be brought under

9. Allison, Robert F.: The role of the medical group manager. *Medical Group Management* 22: 2, 1975.

the same coordinative controls when they are found in group practices.

During the past ten years hospitals have assumed an ever-increasing role in the provision of ambulatory care. In part, this has resulted from consumer frustration with access to ambulatory care in the solo practice-dominated system and in part from the organizational and administrative capabilities of hospitals which enable them to respond to the need by developing ambulatory care programs with a minimum of additional resources. A 1973 survey indicated that a vast majority of community general hospitals are involved in some form of ambulatory care. Of those with outpatient departments, 41 percent are linked in some form to group practices.¹⁰ Partly as a result of this orientation, outpatient visits in hospitals have soared. (The potential of this affiliated form of group practice was sufficiently promising to lead a major foundation to initiate a program of supporting group practice development in hospitals.) This, coupled with hospitals' increasing need to stabilize their financial base as inpatient days decline, provides an excellent opportunity to use the proven organizational base of the hospital for the further development of group practice ambulatory care programs.

Recommendation: Since community nonprofit hospitals have substantial organizational and administrative capabilities including a financial base and are organized in a manner that promotes accountability to the public, they should be encouraged to develop group practices as organizational extensions of the hospital.

The organizational, financial and administrative base furnished by group practices provides one of the most promising mechanisms for the provision of health services in rural areas. In some rural communities the high overhead and the shallow, if not totally lacking, organizational base of solo practices dissipate the resources of the community and severely limit the development of a higher level of services. Through the formation of group practices, with the inclusion of pharmaceutical and dental services, community resources are maximized, ambulatory services are more highly integrated and often expanded, and the community is generally provided with a higher level of coordinated continuous services. The resulting organization has the further capacity to establish rural satellite clinics staffed by nurse practitioners and other physician or dentist extenders in smaller underserved communities.

Most agree that the recruitment of physicians in rural areas is a great deal easier when recruiting into a group. The new physician finds it a great deal easier and indeed financially rewarding to join with associates in an ongoing or a newly-forming practice than to set up a separate organization; he is also more comfortable with the assurance of professional support by his peer group in what could otherwise be a professionally sterile practice in the rural area.

Recommendations: 1. Group practices employing physicians, physician assistants, nurses, nurse practitioners and other allied health

10. Olendzki, M.: Evolving forms of hospital-related ambulatory care. In *Community hospital and the challenge of primary care*. Op. cit. pp. 69-79.

professionals and including a full-time administrator should be declared the mechanism of choice for meeting unmet rural health needs.

2. In areas lacking sufficient population to support a group practice of the magnitude necessary to justify economically a full-time administrator, hospital based group practices utilizing the administrator and organizational capabilities of the hospital should be declared the organizational mechanism of choice.

3. A rural group practice initiative should be developed under the aegis of the U.S. Department of Health, Education, and Welfare to provide seed money for the stimulation of group practices in rural areas.

Although group practices appear to offer many advantages to both providers and consumers of ambulatory health services, expansion of this form of medical practice has been slower than might be expected. This appears to be due in large part to the reluctance of physicians to surrender part of their professional individuality to organizational norms and values and to the fact that this orientation is reinforced by the medical education process and by a majority of their peers in the field.

Little is being done by medical schools to dispel the notion that organizations are somehow antithetical to the professional practice of medicine; in fact, the cumbersome bureaucracies of most medical schools and teaching hospitals themselves often promote the impression that large organizations present a less than supportive work environment for the professional.

Teaching programs based in private group practices provide what is perhaps one of the more viable methods of bridging academic training programs with the reality of practice. This in turn, of course, orients physicians to alternate provider models during their training and serves to dispel some of the mistrust built around the group mode of practice. The pressures on university medical schools to develop off-campus family practice teaching programs in group practice and other residency programs will undoubtedly influence the orientation of teacher-physicians toward practicing as a member of a group.

Recommendations: 1. In order to better prepare health professionals for this mode of practice, all university training centers should be encouraged to develop group practices to be used as part of their training program.

2. Federally funded health manpower training grants devoted to residency programs should include requirements for formalized course work dealing with alternate methods of organizing medical practices and the economic, organizational, and administrative considerations associated with these alternatives.

As more external controls affecting ambulatory care develop, as they surely will, and as the establishment and maintenance of a practice become increasingly complex, physicians may find the group practice option to be more enticing. Physicians, dentists, and other health professionals are probably no more individualistic professionally than lawyers, engineers, and other professionals. Unlike these non-health professionals, however, physicians and dentists can still successfully opt

for solo practice as a method of assuring the degrees of individual freedom that each personally values. As with the other professionals, however, this may be a passing phenomenon and, in the not-too-distant future, health professionals may find it increasingly difficult to practice outside of some organized setting.

Costs may be one of the determining factors affecting this choice. The capital investment necessary to establish group practices presents a real and increasingly important obstacle to the development of this concept. This is also, of course, a problem in solo practice but at the present time it is on a much lesser scale with a great deal less risk. The increased cost of establishing and equipping a practice will likely make it even more difficult to establish a group in the future. Unless capital financing is available to help physicians fund them, future development of group practice will be slow. This funding crisis becomes even a greater problem for community groups and other non-profit-oriented organizations when they attempt to develop a group practice.

Moreover, in some communities where physicians and dentists are already established in solo practice it may be necessary to provide front end funds to "buy out" the equipment, including x-ray and laboratory equipment and perhaps the buildings that often are owned by the solo practitioners, and to consolidate the production of these services in one setting fully utilizing a single set of supportive ancillary services.

Recommendations: 1. Planning agencies should encourage banks and other financial organizations to make capital available at favorable rates to health professionals for the development of group practices.

2. Planning agencies should provide development funds to assist non-profit corporations to establish group practice clinics which may thereafter be leased to professional corporations of physicians, dentists and other health professionals or may retain these professionals on a full-time basis. Eligibility for such assistance should be extended to community general hospitals, to consumer groups and to other public-oriented agencies.

3. Legislation should be enacted to provide low cost start-up loans for use by private and public agencies to stimulate group practice development.

A variety of legal restrictions exist in many States which impact on both the ease of formulation and the integrative potential of group practices. Though such restrictions vary considerably from State to State, the more important ones include: a) the use of the corporate form of practice; b) the joint ownership of a practice and, in some cases, even the joint practice by persons not of the same profession (i.e., physicians, dentists and other health professionals); c) the provision by a professional corporation of services which would not necessarily be considered a direct part of the professional patient care functions (e.g., the provision of a home health care service through a physician group practice); and d) the lay employment of physicians or dentists in a group practice.

Primarily, these are restrictions written into the laws governing professional corporations, though in a few cases they may also have been

extended to partnerships and other forms of practice. The reason for the focus on professional corporations, of course, is that no national statutory framework equivalent to the Uniform Partnership Act has been developed for the professional corporation. As a result, States have effectively been left on their own to develop the statutory framework for professional corporations, the result of which is a variant and often restrictive legal pattern across States. There is a clear need, therefore, both to encourage the modification of State laws that improperly restrict the development of group practice and to promote the passage of Federal legislation directed toward the establishment of a uniform Professional Corporation Practice act.

Recommendations: 1. Planning agencies should encourage State legislatures to modify any existing State laws, particularly those prohibiting the joint practice of physicians and dentists, that may unduly restrict the formulation of group practice.

2. The passage of a Uniform Practice Act governing professional corporations should be encouraged at the Federal level.

ABSTRACT: Many health providers and consumers believe that new health practitioners can substantially extend the provision of primary health care. These are physician assistants, nurse practitioners, and extended function dental auxiliaries. The principal barriers to their full utilization at present are lack of clear reimbursement policies for their services, lack of consistency among State Practice Acts, and lack of supervisors or employers who understand or are trained in their appropriate utilization.

"Sec. 1502. The Congress finds that the following deserve priority consideration in the formulation of national health planning goals and in the development and operation of Federal, State, and area health planning and resources development programs: . . . (4) The training and increased utilization of physician assistants, especially nurse clinicians . . ."

Section 1502(4)

New Health Practitioners

David A. Kindig, M.D., Ph.D.*

Health planners concerned with the distribution of health services and attendant health resources must take the existence of new health practitioners into account. Although the debate continues over whether the concept or the work of the practitioners themselves is experimental, there are enough of them in the market place to draw public and professional attention to their role, utilization and cost effectiveness, and to the legal status of their practice. Many health providers and consumers believe that they can substantially extend the provision of primary health care.

The New Health Practitioner (NHP) is a generic name, coined by Alfred M. Sadler, Jr., M.D., "to encompass those non-physician personnel who are being trained to carry out many of the tasks in the provision of primary care which heretofore have been the sole province of the physician or to perform important tasks which have been oftentimes forgotten."¹ The term is broad enough to include the three specific types of NHPs discussed in this paper: the physician's assistant, the nurse practitioner, and the expanded function dental auxiliary.

NHPs spend a significant part of their work day performing health care tasks which were previously done solely by the physician or dentist. They need not carry out such tasks exclusively; some of their time may be spent in activities previously performed by other health care professionals.

The "newness" of the role is directly related to the new tasks which they perform. This balance between new and old tasks applies to all types of NHPs but is more obvious in relation to the nurse practitioner and the expanded function dental auxiliary, since their training builds on skills they have already learned as nurses and dental auxiliaries. In contrast, a smaller number of physician assistant trainees have had previous formal health professional training.

NHP training programs differ widely in content and length. The formal training which NHPs (especially the nurse practitioner and expanded function dental auxiliary) have previously received is of mixed value.

* Dr. Kindig was Deputy Director of the Bureau of Health Manpower at the time of writing this paper.

1. Sadler, A. M., Jr.: The new health practitioner in primary care. *J Med Educ* 49:845-848, 1974.

Although it provides a base for easier and more efficient acquisition of new skills and makes possible greater flexibility in their use, it may lead the employer to assign old tasks more often than new ones. Also, the NHP's self-perception may require adjustment to many new types of professional activities and relationships.

Any employer considering an NHP for his practice should examine the content of the particular training program and interview the candidate to determine which tasks he or she is trained to perform. Training programs for expanded function dental auxiliaries are probably more consistent in their generic product than programs for physician assistants or for nurse practitioners, except for specific subtypes such as family nurse practitioner, child health associate, and MEDEX.

There are important issues concerning independent and dependent types of practice and direct and indirect modes of supervision. Individual State Practice Acts provide the legal basis for NHP practice and determine the scope of supervision required by the employing physician or institution. A major factor regarding the role and utilization of NHPs is the willingness or know-how of the supervisor to use them in accordance with the training they have received. The supervisor and NHP may unknowingly or knowingly reduce the number of new tasks to a minimum due to uneasiness about the new role, lack of knowledge about what the NHP can do, or as stated earlier, the employer's perception of what tasks need to be done. Some NHP training programs are beginning to feature training for supervisors in an effort to overcome these problems.

Very little is known about the quality of the practice of NHPs. Present technology to measure quality of practice of any professional group is inadequate. In general, few if any problems have been reported as to patient acceptance of the practitioners or the quality of their performance during training. Barriers to the increased utilization of NHPs are not likely to result from the quality of care provided or patient acceptance but from other issues discussed below.

It should not be assumed that the use of NHPs in a given practice setting will necessarily increase the patient load and, therefore, improve access to health care. It may be that more or different kinds of services may be offered to regular patients or that the physician or dentist may work fewer hours. Such outcomes need to be evaluated in individual practices and studied nationally.

Similarly, the assumption that the NHP will play a primary role in providing care to medically underserved areas must also be studied and evaluated. It is true that a number of training programs seek to prepare their graduates for particular practice locations. This raises the danger of encouraging different standards of care for well-served and underserved areas. It is better if the skills acquired in training and through experience are used where these skills are most needed, not in any one particular geographic or socioeconomic setting.

Legal status and reimbursement are the main barriers to a market test of the optimal utilization of NHPs in various practice settings. The nurse practitioner, who is a licensed registered nurse, generally practices under the Nursing Practice Act of the individual State. However, when nurse practitioners perform tasks normally carried out by physicians, these activities may be governed by the Medical Practices Act which must be considered in conjunction with the Nursing Practice Act. A significant number of States have amended their statutes to legalize the expanded functions of nurse practitioners. In addition, approximately 40 States have enacted legislation permitting physician assistants to practice under the supervision and control of a physician.² The State Dental Practice Acts prescribe the nature and extent of expanded functions that the dental hygienist or dental assistant may legally perform. The lack of common legal status among the States has an adverse impact on the mobility and common utilization of NHPs. Uniform standards for credentialing NHPs could be beneficial in eliminating these problems. Until this is achieved, the planner needs to become familiar with his area's State Practice Acts.

Although some studies have been made of the cost effectiveness of physician assistants in a private practice, many employers are reluctant to hire them because of economic uncertainties. The current Social Security Administration study on reimbursement of physician assistants and nurse practitioners may provide evidence that will bring about changes in Medicare, Medicaid, and private third-party insurance as well as affect any ultimate system of national health insurance. Such changes would have a major impact on the NHP concept.

Nurse Practitioner

The first program to prepare nurses as "nurse practitioners" (NPs) was initiated at the University of Colorado in 1965. It prepared registered nurses to perform certain functions previously done by pediatricians. These included obtaining and recording a health and medical history, performing a physical examination, and managing minor childhood diseases under supervision. Evaluation of this program showed that the nurses were highly competent in assessing normal and abnormal physical findings in children, were capable of caring for the majority of children they saw and were well accepted by parents, children and pediatricians.

The success of this initial program stimulated the development of other training programs not only in the area of pediatrics but to prepare family nurse practitioners, school nurse practitioners, and adult and maternity nurse practitioners. Some of those were Federally financed from a variety of sources.

The Nurse Training Act of 1971 provided broadened authority for

2. A synopsis of State rules and regulations is maintained by Bureau of Health Manpower, Bethesda, Md. Cf. also Cohen, H. S. and W. J. Dean: To practice or not to practice: developing State law and policy to physician assistants. *Milbank Mem Fund Q*, Fall, 1974, pp. 349-376.

special project grants and contracts and specifically stated that funds could be used to "develop training programs and train, for new roles, types of levels of nursing personnel including programs for the training of pediatric nurse practitioners or other types of nurse practitioners." The Nurse Training Act of 1975 continued and expanded this authority.

National nursing and medical associations voiced support of the development of the nurse practitioners concept. The American Nurses Association worked with appropriate medical organizations and others to develop guidelines for short-term or continuing education programs to prepare nurse practitioners. The interest of these programs was to improve access to care and to provide services in medically underserved areas.

Phase I data from a study being conducted by the State University of New York at Buffalo for the Division of Nursing of the U.S. Public Health Service identified 133 Nurse Practitioner Training Programs which offered a formal curriculum (as opposed to in-service training) operational as of January 1, 1974. Of these, 87 were certificate programs and 46 were at the master's degree level. Pediatrics was the specialty most represented. This was particularly true of programs which awarded a certificate (43 of 87). Maternal health (including midwifery) and family health were the specialties most represented in masters' programs. By the end of 1974, approximately 4,000 nurses completed certificate programs and 1,000 completed master's degree programs.

Throughout history nurses and physicians have traditionally worked together, their relationship varying from independent to mutually dependent. Roles have been influenced by factors such as organizational structure, technology, demands of the patients, individual personalities and availability of related health workers. As rapidly expanding knowledge has been applied to practice, professional equilibrium has often been strained. Change in one part of the system influences and modifies practice throughout the entire system.

The registered nurse has long functioned as a responsible member of the health team. The role now includes myriad tasks from the most simple to those using complicated lifesaving technological devices. It involves a knowledge base from which prudent decisions need to be made and it requires the ability to interpret health care to patients and their families.

Experimentation with expanded roles in nursing is not new. Graduate programs have prepared clinical nurse specialists to function as providers of patient care involving many independent judgments as well as training them as teachers and administrators. Nurse midwives and more recently pediatric nurse practitioners are providing expanded services to their clients. Thus expanding the nurse's role so that this professional group can assume more responsibility for primary patient care appears to be a logical move.

Physician's Assistant

The concept, training, and utilization of the mid-level health professional known as a physician's assistant (PA) dates back in the United States to around 1965, when Eugene A. Stead, Jr., M.D., devised a two-year training program for "assistant to the primary care physician" at Duke University in Durham, N.C. In 1969, Richard A. Smith, M.D., began a one-year program at the University of Washington, Seattle, to augment the training of former independent-duty military corpsmen who could help relieve the demand for physician's services, especially in rural areas. This was followed by a four-year college-based physician's assistant training program at Alderson Broaddus College in Philippi, West Virginia, and a five-year Child Health Associate Program at the University of Colorado in Denver.

During this same period, other events called attention to the potential role of mid-level health workers. The National Advisory Commission on Health Manpower, in its report of November 1967, stated "the development of health personnel at the intermediate professional level has been repeatedly explored, and a few pilot programs are now under way. Because we regard the use of such personnel as a major factor in improving the utilization of health professionals, we recommend that the Federal Government give high priority to the support under university direction of experimental programs which train and utilize new categories of health professionals.³

The Comprehensive Health Manpower Training Act of 1971 provided for the planning, development and operation of programs "to initiate new types and patterns or improve existing patterns of training, retraining, continuing education and advanced training of health personnel . . . particularly physician's assistants, dental therapists, and pediatric nurse practitioners." Responsibilities for carrying out this Act has resided within the Bureau of Health Manpower in the U.S. Public Health Service.

From this beginning a slow but steady growth in program numbers occurred, leading in 1971 to the development by the American Medical Association of "Essentials of an Approved Program for the Assistant to the Primary Care Physician." In 1972, with the help of collaborating professional organizations, the AMA initiated a process of program review and evaluation as part of the accrediting function of the Council of Medical Education. Subsequently, in April 1974, the U.S. Office of Education designated the Council as the official accrediting body for Assistant to the Primary Care Physician.

There have been three basic types of physician's assistants programs:

1. MEDEX programs for former independent-duty military corpsmen, requiring 12 to 25 months of study (usually 3 to 6 months of intensive didactic work in basic and clinical sciences at a university medical center

3. National Advisory Commission on Health Manpower: Report. U.S. Government Printing Office, Washington, D.C., 1967.

followed by a preceptorship with a practicing physician for 9 to 12 months) leading to a certificate.

2. University medical center based programs consisting of a two-year training period (beginning with 9 to 12 months of didactic work in basic and clinical sciences followed by 12 to 15 months of a variety of clinical rotations usually under preceptorships in private practice settings) leading to a certificate and/or a baccalaureate degree.

3. College or university programs in nonmedical school settings, requiring about two years of training (beginning with 9 to 12 months of basic and clinical didactic work followed by 10 to 15 months of clinical rotation and preceptorships) leading to a certificate, associate, or baccalaureate degree.

The physician's assistants programs in general have been oriented to rural and inner-city shortage areas and to meeting the need for ambulatory care.

Published data on graduates of physician assistants programs are limited. In October 1974, a survey was conducted by the Association of Physicians Assistant Programs on the graduates and students of the 49 member programs. The study showed that 75 percent of the students and graduates were male and 25 percent female. Ninety-one percent were white, 4 percent black, 2 percent American Indian, and 3 percent of other ethnic origins.

Although white males predominated in early classes, increased minority enrollment has been encouraged by Federal support and has resulted in the graduation of greater numbers of minority physician assistants and a gradual decline in the number of male graduates since that time.

The survey showed that 57 percent of the graduates were located within general family practices, 11 percent in internal medicine, 6 percent in emergency medicine, and 3 percent in general pediatrics. Twenty-three percent indicated that they were in specialties or were performing functions not related to the primary care specialties.

In 1975, within a total of 62 operating PA programs, 56 were preparing primary care physicians assistants and 52 have been accredited by the AMA's Council on Medical Education. Of these 52 accredited programs, 29 were sponsored by medical schools, six by schools of allied health and ten by academic medical centers. The remaining seven were in other than traditional settings for medical education. Twenty-eight programs have a first year enrollment capability of less than 20 students; only four can admit more than 40; and 30 programs have the capacity to admit 30 to 40 students per class.

The National Board of Medical Examiners, with financial support from the U.S. Department of Health, Education and Welfare, has developed a certification examination for the assistant to the primary care physician. This examination has been increasingly relied upon by State agencies

that regulate PA utilization and employers who are evaluating PA job qualifications. However, there is a continuing need to develop appropriate mechanisms for evaluating the skills of physician assistants as well as other types of new health practitioners.

There has been so much debate as to whether nurse practitioners or physician assistants are more desirable, the question must be dealt with openly. Much of the controversy has been nonsubstantive, arising from professional politics, and this has served only to confuse the issue. There are real differences in the backgrounds of NPs and PAs and in the skills they have acquired during their training. Some but not all of these are evening out as experience with the NHP concept grows. At present, however, it is impossible and inappropriate to make a judgment as to which is "better" for a particular practice. A number of studies may shed light on the question in the near future.⁴

Each employer in the meantime should review the kinds of skills he requires and interview individuals with these skills in mind. The personal characteristics of the individual and the training may be more important in the long run than the categorical type of NHP to be selected.

Expanded Function Dental Auxiliary

The term expanded function dental auxiliary (EFDA) refers to dental hygienists' and dental assistants' performance, supervised by a dentist as prescribed by appropriate State Practice Acts. It includes a wide range of clinical skills or functions not previously included in statutory regulations nor taught in conventional training programs.

The currently accepted methodology for producing EFDAs is by modifying and utilizing the existing formal auxiliary education programs, and providing supplemental training and continuing education for students and the practicing work force.

Present credentialing requirements of the States for the expanded function auxiliary range from none to registration, certification, or licensure. Uniform national standards have not been established for auxiliaries trained or practicing as EFDAs.

Since 1972, the Federal Government has supported more than 20 training projects and eight education materials development projects. Approximately 3,100 dental auxiliaries and over 200 faculty will have received training in expanded functions in completed projects awarded through 1975, including 900 practicing dentists who will have received some level of training in team principles.

Federally supported efforts to encourage the effective utilization of auxiliary personnel by the dental profession have extended over many

4. Systems Sciences: Nurse practitioner and physician assistant training and deployment study. Contract 230-75-0198, National Center for Health Services Research, Rockville, Md., September 30, 1976.

years. From 1961 to 1972, Federal grants were awarded to schools of dentistry to support programs for teaching dental students to utilize dental auxiliaries efficiently. The first effort, known as the Dental Auxiliary Utilization Program, has been successful in promoting improved delivery of services through training in "four-handed" dentistry. These programs have been developed in all dental schools and teaching four-handed techniques is a growing priority in dental auxiliary programs.

From 1964 to 1970, studies were conducted at the Dental Manpower Development Center in Louisville, Kentucky, to investigate the feasibility of expanding the functions of dental auxiliaries. Other Federal and non-Federal research has similarly been conducted. Findings from all studies clearly indicate that trained dental auxiliaries, under supervision, can perform selected intra-oral procedures and render services of high quality. Further findings indicate that the delegation of such procedures in the delivery of dental services permits a significant increase in productivity over provider teams utilizing traditional dental auxiliaries. One recent study shows significant cost benefit results from efficient delegation of expanded functions to trained auxiliaries.⁵

To implement the results of research and to encourage further improvements in the development of dental manpower, the Training in Expanded Auxiliary Management Grant Program was initiated by the Federal Government in 1971. The purpose of the program is to train dental students in the organization and management of a dental practice developed on the concepts of four-handed dentistry and utilizing a team of auxiliaries, including those trained in expanded functions. From 1972-1975, 31 dental schools have received Federal support for these programs and approximately 2,600 dental students have taken part in them. Currently 1,470 dental students are receiving training.

Although the number of dentists graduating with special training in this mode of dental practice to date is relatively small, a number of States have changed or are in the process of changing their State dental practice laws to permit dentists greater flexibility in the delegation of functions to auxiliaries. At the end of 1973, 44 States had in varying degrees authorized expanded functions either by amendment of the State dental law or by issuance of appropriate regulations by the Board of Dentistry.

Conclusion

Despite these developments, there are still a number of barriers to the full use of NHPS. These are primarily lack of clear reimbursement policies for their services, lack of consistency among State Practice Acts, and the lack of supervisors or employers who understand or are trained in appropriate utilization. The most effective use of NHPs will not be achieved until these barriers are removed.

5. Redig, D., M. Snyder, G. Nevitt, and J. Tocchini: Expanded dental auxiliaries in 4 private dental offices: 1st year's experience. J Am Dent Assoc 88:969-986, May, 1974.

For the present, Health Systems Agency staffs should gather information on training programs and State Practice Acts and make this available to providers who are considering the use of NHP's. As successful practices utilizing NHPs are developed, information about them—including cost effectiveness—should be collected and shared. If reimbursement policies change, this information can provide the basis for more quantifiable planning for the use of NHP's in the future.

ABSTRACT: There are two forms of potential cooperation between Health Systems Agencies and Professional Standards Review Organizations—the exchange of information, and coordinating action where the programs interact. At present, the information exchange is easiest to analyze. A study of present HSA-PSRO relationships suggest a series of steps which can be undertaken now. A number of recommendations for further Federal action are presented.

"Sec. 1502. The Congress finds that the following deserve priority consideration . . . the formulation of national health planning goals and in the development and operation of Federal, State, and area health planning and resources development programs: . . . (6) The promotion of activities to achieve needed improvements in the quality of health services, including needs identified by the review activities of Professional Standards Review Organizations under part B of title XI of the Social Security Act . . ."

Section 1502 (6)

Cooperation Between Health System Agencies and Professional Standards Review Organizations*

Lewis H. Butler, Michael L. Parker, Peter P. Budetti, Phyllis Fetto, Shirley Kressel and Lauren LeRoy

The purpose of this paper is to examine the potential relationship between two new types of regulatory agencies, Health Systems Agencies (HSAs) and Professional Standards Review Organizations (PSROs), which have been established under Federal law to regulate the supply and use of medical care resources. Specifically, we analyze to what extent cooperation between these agencies is desirable and workable, and how the Federal government should promote such cooperation.

Created by the Social Security Act Amendments of 1972, PSROs contract with the U.S. Department of Health, Education, and Welfare to oversee the quality and necessity of medical care provided to Federal beneficiaries, principally the elderly under Medicare and the poor under Medicaid. Unlike the HSAs, which are to be dominated by consumers and local government leaders, the PSROs are composed almost entirely of local physicians.

The two pieces of authorizing legislation were the product of different and competing Congressional committees. The separate origins of the two Acts, together with the belief held by committee members that the agencies had different concerns and could function independently, led to their establishment as autonomous programs. Congress made only a few limited and cautious references to PSROs when the HSA law was passed in 1974. It required HSAs to "coordinate" their activities with PSROs in their area (Section 1513 (d)); to take into account matters identified by PSROs as requiring action in the interest of quality of care (Section 1502 (6)); and to seek agreements with a wide range of organizations—including PSROs—to assure that actions taken by those organizations which alter the area's health service system are "consistent" with the HSA plan (Section 1513 (d)). Although the same Department (HEW) is responsible for implementing both pieces of legislation the different requirements of the two laws led to substantial differences in the geographic areas designated for each.

The decisions and actions of the two agencies are certain to affect each other and their collective impact on medical care. The potential interactions between them are worth considering early in their development; the topic is now of more immediate concern in view of the regulations issued in March 1976 (41FR12812) requiring HSAs to seek

* This paper is excerpted from a draft report (November 15, 1976) of a study conducted for the Health Resources Administration by the Health Policy Program of the School of Medicine, University of California at San Francisco (Contract HRA-230-75-00-71).

written agreements with PSROs to coordinate their activities.

There is potential for conflict between HSAs and PSROs because of their different roles and the different constituencies they serve. Based in the community, the HSAs may well give first priority to equalizing access to care. The PSROs have no responsibility to improve access but only to see that the care paid for by government is of good quality and necessary. These goals will conflict, for example, if a choice must be made between putting primary care facilities in an area that is short of such care, or expanding sophisticated technologies in existing medical centers in order to improve the quality of care.

Seen against this background, this analysis has a broader purpose. It assumes that the trend toward increasing governmental responsibility for the availability, cost, and quality of medical care will continue. If nothing else, the large governmental share of a rapidly inflating national medical bill seems to require it. Whether or not HSAs and PSROs continue to be instruments for dealing with these problems in the coming decades, it seems inevitable that some publicly accountable body or bodies will be given responsibility for balancing the often conflicting concerns for cost control, equal access and better quality. Thus it becomes necessary to try to understand not just how these two coming sets of regulatory agencies may relate to each other, but generally what the interaction is between the forms of medical care regulation assigned to them.

At the start of our study, three broad possibilities were considered for the relationship between HSAs and PSROs. One was a total "hands off" approach in which each would operate totally independently of the other and perhaps serve as a check and balance to the other. This was soon rejected as unreal, as well as in violation of the general provisions of the 1974 Act. Each agency has enough potential power and influence over the provision of medical care that, unlike the earlier Comprehensive Health Programs and Regional Medical Programs, they will have to deal with each other at some point.

A second possibility was that one might become an arm of the other, specifically that the HSA with a broader mandate might use the PSRO exclusively for determining the impact of its decisions on the quality of care. This was also rejected as unworkable and undesirable from the policy standpoint, given the different perspectives intended for the HSA with its public base and the PSRO with its base in the medical profession.

The possibility that remained was to try to provide some structure to an arms-length relationship that would inevitably begin to develop between them. That is why this report is about cooperation between HSAs and PSROs. Some may think that promoting such cooperation will make it easier for one to influence the other, usually meaning that it will become easier for the medical profession through the PSRO to dominate the HSA. Our view is that if such domination occurs in a community, it will be because of the way power is now held and exercised informally and that providing structure to the way each agency deals with the other will probably not make the situation any worse.

Finally, there is a longer-range goal that makes cooperation important.

Now that medical care is moving increasingly from being a private concern to a public one, the two principal parties to the transaction, the public and the medical profession, have to learn to deal with each other at the local level. If one cannot come to understand better the different interests and perspective of the other, then the orderly settlement of inevitable and critical disputes between them will be difficult.

The Study Method

The approach used in our study was to examine how the functional processes of HSAs and PSROs may be interrelated and to test that analysis against the actual experience of predecessor agencies and of functioning HSAs and PSROs, many of them still in early stages of development. Field reviews were held at eight sites and we asked HSAs and PSROs at 11 additional sites to review our preliminary conclusions and recommendations and our summary of agency functions and possible relationships.

Locations were selected not as a representative sample but because there were functioning planning and peer review agencies which were not only prototypes of those created under the new legislation, but were generally regarded as well organized and staffed. Agencies reported to have serious organizational difficulties were specifically avoided.

The Need for HSA-PSRO Cooperation

HSAs and PSROs share certain common long-range goals and problems. Both have mandates to improve quality of care and to control costs. Both are ultimately concerned with maximizing health benefits at a given level of expenditure. Both are directed by Congress, although in different ways, to improve a complex system of medical care delivery. And each will have to deal with the uncertainties about costs and benefits of health services that make regulation of medical care so difficult and controversial.

As regulators of the same health care system, both agencies are given controls on the supply and demand for services and facilities as major levels to accomplish these goals. The HSA can influence the supply of services, reducing surpluses and filling gaps to promote what it sees as an appropriate balance of available services. It can also try to influence demand by educating consumers in the use of services and by promoting accessibility. At the same time PSROs will have a major influence on patient demand by setting criteria and standards for reviewing what government is paying for, therefore influencing what hospitals and physicians provide.

Inevitably, each agency will find it must face up to the effects worked on supply and demand by the actions of the other. For example, in reviewing certificate-of-need applications for new hospital facilities, an HSA may decide to reduce the supply of hospital beds in the area. Tightening the bed supply can create pressures to use scarce hospital resources more efficiently, providing incentives which support the goal of PSROs' utilization review. But if an HSA reduces facilities beyond a certain point, the ability of PSROs to assure quality, as they define it, may be impaired.

PSRO activities will impact similarly on HSAs. If a PSRO sets standards of care leading to an increase in the use of high cost hospital facilities, the ability of the HSA to shift community resources away from such facilities toward greater outpatient care may be impaired. Or, if a PSRO finds evidence that adequate quality cannot be maintained in a specialty unit performing fewer than a certain minimum number of procedures, this should lead an HSA to reduce the number of such units. In this case, needless increases in the use of the units may take place unless PSRO review holds the use to an appropriate level.

Cooperate: How and About What?

There are two forms of potential cooperation between HSAs and PSROs that might benefit the public. One is the exchange of information; at this stage in the development of the agencies it is the easiest to analyze in detail. The second is coordinating action where the activities of one agency affect the other.

The potential for flow of information between the agencies is principally from the PSROs to the HSAs. HSAs have great needs for the type of data and information which PSROs can generate and no other place to go to get much of that information. PSROs will have the capacity to describe patterns of practice, distribution of types of medical cases and services, patient populations receiving care and a variety of other features of the medical care system as it functions in the community. This information has not been publicly available before because it was scattered in doctors' offices, hospitals, insurance companies and elsewhere. It is essential to the HSAs because if they are to make decisions about changing patterns of medical care, they first need to know what those patterns are.

Information generated by the PSROs might be used by HSAs in a number of ways. Among them are:

- Routine PSRO data about hospitalizations, including the diseases and surgical operations involved and the length of stay in the hospital might be used by the HSA in determining need for hospital beds and facilities.

- Other easily-collected PSRO data, such as the number of extensions of hospital stay for lack of an alternative facility, could be used for determining need for nursing homes or other housing arrangements.

- PSRO patient care criteria could be used as aids in setting standards for services or institutions such as intensive care units, and modifying projections of need for services to take into account future changes in practice patterns.

PSROs can also help HSAs anticipate the impact of their decisions on the quality of care. HSAs may try to organize some special kinds of medical care on a regional basis, or limit the supply of hospital facilities, or control the expansion of expensive new technologies or promote cost-saving innovations in the way care is provided. In each case there will be a potential impact on the quality of care. Predicting that impact will be difficult at best, and we do not foresee that HSAs will have much

independent capability to do so. As PSROs document the present quality and use of services they will become one source of professional opinion the HSA can use to help foresee changes in quality that may result from their actions.

There is also some potential benefit from information flowing the other way from HSAs to PSROs. For example, a PSRO may have difficulty reducing excessive bed utilization in a hospital where physicians say they have no other place to put patients. The HSA could provide the PSRO information on nursing homes or other institutions in the community that might be used instead. This same kind of information could help the PSRO establish its criteria for review of hospital stays.

The most promising places for the HSAs and PSROs to begin to go, beyond exchanging information to coordinate specific actions, is in curbing obvious excess capacity in the system and attacking the problem of poor quality care. Both agencies seem likely to agree on the need for these steps no matter what other differences they may have. If large numbers of hospital beds are lying idle and this is making it more difficult for the PSRO to make its review effective, it seems possible that the HSA could get PSRO support to compel hospital mergers or other actions to reduce bed capacity. If the quality of care in an institution falls far below any acceptable community standard, both will have an interest in remedying the situation and a greater chance of success by acting jointly.

Limits to Cooperation Between HSAs and PSROs

While the two agencies share some basic concerns, their constituencies, capabilities, and points of leverage within the system differ significantly. Operating on different levels with different perspectives, these agencies cannot and should not always work together or make the same decisions. In many important areas their responsibilities do not overlap at all. The PSRO review process involves, among other responsibilities, medical judgments about individual cases and evaluation of individual physicians in which HSA has no role. HSAs make plans and review decisions involving services unrelated to PSRO. HSAs are supposed to have a broader view of the public interest than the PSROs whose concerns are purely medical.

After the first year of study, our broad finding was that the two agencies can and should work together in some instances, particularly in the sharing of data, but that their interests diverge too greatly to make such cooperation generally possible or desirable in a number of other respects. A secondary conclusion was that for the near future they will often be too preoccupied with becoming established, too unsure of their own methods, too limited in staff resources and in some cases too mistrustful of each other to make cooperation beneficial even in those instances where it is desirable.

After another year of site visits and obtaining comments from agencies around the country, our findings have changed somewhat. We now find a growing sense in both HSAs and PSROs that their self-interest requires knowing what the other is doing and trying to influence it. We also find the

agencies more resilient and less concerned about being forced together by the Federal government.

At the same time we continue to be skeptical about the extent of genuine cooperation between the agencies and how beneficial it will be. The mutual mistrust is still there. Where it does not exist we found a new problem - the prospect that the mutual self-interest and cooperation of the agencies may turn out to increase the quality of care and access to it and leave cost control behind.

Our conclusion is that the agencies should cooperate where their interest overlaps because they need to in order to do their jobs. Where that is not the case, they need to be left to go their own ways.

We discuss below a number of concerns about promoting successful cooperation between the agencies.

Incentives to Work Together - Internal Agency Politics

There is benefit to PSRO physicians in agency cooperation because the relationship offers a means of assuring that planning decisions that affect medical practice are made on the basis of accurate information. The PSRO physicians see that the HSAs, unlike their predecessor planning agencies, have the power to change things. In their own self-interest they want to be close enough to HSA decisions to have some influence over them. On the HSA side there is an incentive to cooperate not only to obtain the PSRO data but also to share in the professional credibility that PSROs can give to their plans and decisions. Faced with possible opposition from other, more narrowly oriented physician groups such as specialty societies interested in a particular technology or more politically oriented groups such as the local medical society, the HSA can profit from the support of the PSRO.

This greater mutual self-interest can, of course, increase the chance that the PSRO will eventually exert more professional-provider influence over HSA decisions than the Congress wanted when it reduced direct provider participation in health planning. But we found HSAs aware of the danger and fairly clear on the point that they did not intend to be bound by PSRO advice.

Different Goals and Constituencies

PSROs are assigned responsibility for assuring the quality and appropriateness of care paid for with public money. Cost saving is a hoped-for result of that mission but not a mandate. For the HSAs, assuring equal access to care, controlling costs and improving quality are stated as equal goals, but the history of the legislation places greater emphasis on the first two.

We found, however, and it is not surprising, that the lay members and staff of the HSAs are more concerned about maintaining medical quality at high level and improving access than they are about cost control. Their constituency wants better services and more access to them, which are consistent with PSRO goals. Most of that constituency is not concerned about costs because others, government and employers, are paying the bills. As Federal concerns about cost become more intense and if

pressure is put on HSAs to control costs, the situation may change. For the present, however, the HSA has little incentive to consider trade-offs between quality and cost control.

The result is mutual self-interest in promoting higher quality care. Whether cooperation to that end is in the public interest depends on how important cost control is. Our experience suggests that both agencies have at best a secondary interest in cost control. Their constituencies are not much for it and are against it if it means lower quality care.

Confidentiality of PSRO information

The confidentiality requirements of PSRO will be a major stumbling block in the development of agency relationships. HSAs must provide public access to information which they possess. Until final Federal regulations on the scope of PSRO confidentiality are issued, PSROs feel bound by their own interpretation of their obligations under the PSRO law, their contracts, and State case and statutory laws. Generally, they are willing to share aggregate data as well as norms, standards, and criteria. Many are willing to share data about patterns of care in individual hospitals provided the data are not released until the PSRO has time to assure reliable collection and analysis. All information which explicitly identifies individual patients and physicians can remain within the PSRO, since HSAs have no desire or need for such material.

Information which reflects directly on the performance of individual institutions is the toughest issue. PSROs need to protect this information in order to assure reliable collection in the future. HSAs do not generally want or feel they will have authority to get deeply involved in actual assessments of institutional quality, but they will want to be aware of deficiencies in their decision-making and not, for example, be in a position of allowing substandard facilities to expand. A special problem exists in the cases of very small institutions, where information may reflect on individual physician performance.

Different Operating Methods and Scope

We were initially concerned that the different operating methods of the agencies would make cooperation undesirable or unworkable. If HSAs were mainly engaged in political trading, there would be little use for technical PSRO inputs. If the HSAs were not able technically to make use of the PSRO information in their deliberations, it would be a waste of time and effort to provide it to them. On the other hand, if PSROs narrowly reflected hospital and physician interests, their criteria and data would continue to support current overuse of care and would offer HSAs no advantage as predictors of future need.

Our conclusion is that while there are still problems, notably with HSA technical capacities, cooperation is worth the effort. Certainly HSA activities will always be political in the broadest sense, and this is proper. But we found HSA staff increasingly aware that the stronger their technical capacity the easier it is to limit and sharpen the political choices. The PSROs for their part are well along in developing reliable data collection systems and some recognize the importance of providing

their information and assistance to help rationalize HSA decisions and processes.

PSROs presently review only patients paid for through Medicaid and Medicare and other Federal programs, primarily in short-stay hospitals, while HSAs are concerned with planning for the entire local population. This variance might limit the usefulness of PSRO information for HSAs because, for example, the poor and elderly are sicker than the population as a whole. However, many PSROs and closely allied foundations for medical care are contracting with private insurers to review all acute inpatient care and some are beginning to review long-term care. We assume that PSROs will ultimately be reviewing most care. For these reasons the limited scope of current PSRO data is a short-range problem.

Different Geographical Areas

We found no significant interest or value in redesignating HSA or PSRO boundaries to attain a perfect overlap. Several agencies had previously worked hard to establish identical areas, but now felt that this was not really necessary and certainly not worth the problems associated with redesignation. Agencies are developing sub-regional or Statewide organizations which may become the vehicles for resolving technical problems arising from geographic incongruence.

Limited Federal Influence Over the Agencies

There are basic difficulties with the Federal role in promoting cooperation between HSAs and PSROs. They are, after all, community-based organizations which merely contract with the Federal government. With the exception of the few local government HSAs they are not even governmental entities but rather non-profit corporations. The Federal government can withhold funding from those agencies which do not cooperate but cooperation in such a climate is not apt to be very successful.

We question the effectiveness of the March 1976 regulation because we found no case in which fulfillment of the specific requirement for a signed agreement in itself led to substantial concurrence by the agencies to working together in specific ways. In one instance an agency asked us what the agreement meant that they had signed.

There are nevertheless a number of Federal steps that can be taken to encourage cooperation. One is to continue issuing regulations on specific issues, such as information exchange. Some agencies may comply with the letter of the regulation only, but the more specific the regulation, the better the chances are. Also in rare instances a threat to cut off funds might be justified, such as where a PSRO arbitrarily refuses to make data available to the HSA or the HSA refuses to allow PSRO testimony on the impact of its decisions on quality.

Cooperation can also be encouraged through dollar incentives, either in the form of grants or bonuses for joint action. It can be supported by Federal technical assistance but that requires building the capacity somewhere to provide such assistance, perhaps in the new health planning information centers, in State governments or in Statewide

PSRO councils. In other fields Federal technical assistance to localities has not been notably successful.

Finally, a broad program of information exchange among HSAs and PSROs nationally might be useful. Simple lack of knowledge of what others are doing is itself a barrier to HSA-PSRO cooperation.

The Problems with Cooperation in Summary

The fundamental problem is one of balance and proportion to get enough cooperation on specific issues but not too much on broad goals. What is needed is a relationship that preserves some tension between the agencies and independence on either side. Neither should be bound closely to the other and specifically the HSA should not slip into being bound entirely by PSRO judgments of quality. Our recommendations are based on the view that the agencies should be pushed together only to the extent necessary to operate on the basis of common information and a common understanding of how the actions of one will affect the other.

Summary of Recommendations

1. HSAs should request, and PSROs should be required to provide to them, aggregate data describing medical services and how they are used, both in the community as a whole and in individual hospitals and other institutions. HSAs should develop the capability to use such data effectively.

Data routinely collected by PSROs for their own purposes provide a source of information on medical problems in the community, where patients come from, and the use of medical services generally that is not available elsewhere. Such information is essential if HSAs are to make good decisions on the need for facilities and services. No threat to confidentiality of patient records is involved because there is no need to identify individual patients or individual physicians. Also, the public's interest in knowing what medical services it is paying for outweighs any institutional right to nondisclosure of its activities. Presently, however, a number of HSAs are not prepared to make good use of such information and if they do not develop that capability, burdening the PSRO with supplying the data will be pointless.

2. PSROs on request should also be required to provide the HSAs copies of the norms, standards and criteria by which the PSROs review the quality and appropriateness of medical care.

PSROs will determine what medical care the Federal government will pay for and hence will influence the use of services. HSAs need to know on what basis those decisions will be made in order to be able to predict how the need for services and facilities may change. Planning agencies in the past have not been much involved in evaluating the quality of care in institutions but HSAs will increasingly have to face quality issues as they make decisions about what institution is best able to meet a particular need. PSRO norms, standards and criteria can provide them with one guide to making such decisions. Finally, many PSRO standards for patient care can be translated into HSA standards for facilities, equipment, and manpower.

3. HSAs should not request from PSROs, and PSROs should not be required to release data from which individual patients can be identified or findings of reviews of the quality of care provided by individual physicians or within specific institutions. But PSROs should be allowed to release information on the quality of care in individual institutions where they judge that it is necessary to do so for their purposes.

HSAs do not need information about individual patients to do their job nor do they need information on the performance of individual physicians, which is primarily the concern of State medical boards and the PSROs. The state of the art of quality assessment, moreover, is too primitive to allow wholesale release of such information without danger of serious harm. If HSAs had such information the public would have full access to it. Not only might individuals be hurt by public disclosure without significant public benefit, but the reliability of the PSRO data system, which depends on records kept by physicians, would be jeopardized.

Information on the quality of care in particular institutions could be of value to the HSA in making decisions on the services offered, but the HSA can request it directly from the institution. The HSA can make its own judgment if the institution refuses to provide the information.

To force the PSRO into the middle of this process would threaten its relations with individual institutions. If PSROs, however, wish to make public well-documented evidence of poor performance by an institution in order to carry out their own mandate, they should certainly be permitted to do so, even though it may reflect on individual physicians practicing in that institution.

4. HSAs should seek PSRO opinion on the potential impact of HSA decisions and actions on the quality of care but should not be bound by that opinion.

HSAs actions, such as concentrating particular services in a few locations serving a larger region, will have an impact on the quality of care. PSROs can provide one source of professional judgment on what that impact may be, based on their review and documentation experience, and will probably be a better source than other specialty or political professional groups. PSRO opinions will reflect their own professional notions of quality, however, and the HSA must remain free to reach its own conclusions.

5. HSAs and PSROs should be required to meet periodically to discuss joint action to make each more effective. HEW should evaluate such joint actions to determine the impact on the cost of services, as well as on quality and access.

Among the subjects that ought to be discussed, are 1) the need for the HSA to hold down the supply of hospital beds and other facilities and equipment, or to encourage mergers or consolidations, where that is required to make PSRO review of unnecessary or inappropriate care effective; 2) the need for the PSRO to exercise careful review of the use of services where HSA standards, such as requiring a minimum level of use to justify a service, may promote overuse; and 3) the impact of PSRO

criteria and standards on equalizing access to care, controlling costs, and encouraging more efficient ways of providing care.

Increasingly, the action of one of the agencies will have an impact on the other agency. Requiring them to coordinate their actions in all respects is meaningless because the goals and constituencies of each are different. But at least they should be required to meet, discuss and attempt to agree on subjects of common interest. They should, in effect, have to bargain with each other in good faith, recognizing that often it may be difficult or impossible to agree.

6. Where agencies are already functioning, no Federal action should be taken to compel realignment of different HSA and PSRO geographical boundaries to make them the same, but Federal assistance should be given to the agencies to help them minimize technical problems that result from such incongruities.

Changing designated areas can cause serious organizational and political problems and the potential gain in data sharing and other forms of joint action is not worth the disruption and antagonisms that might result. If, however, both the HSA and PSRO favor a realignment of boundaries to make them congruent, or if no agencies presently exist, HEW should consider a change. Technical problems due to incongruent boundaries, notably involving data collection and sharing, can be eased by developing model arrangements which should be provided to local agencies to assist them.

7. The respective Federal bureaus responsible for funding PSROs and HSAs (the Bureau of Quality Assurance and the Bureau of Health Planning and Resource Development) should promote projects to test methods for HSA-PSRO cooperation in selected fields.

These would include PSRO review of non-Federal as well as Federal patients to provide both agencies with data on all medical care in the community, not just Federally funded care; joint data systems on particular medical services; joint studies on particular medical services; and methods of setting standards and criteria.

Trial projects are necessary to develop the methods for implementing a number of the recommendations of this report as well as testing the advantages generally of HSA-PSRO cooperation. Through such projects the Federal government can take advantage of local initiative and compare a number of different approaches to learn what works best.

8. The Federal government should take the steps required to implement the forgoing recommendations. Some new regulations will be required, as well as modification of existing regulations. It is possible that there may have to be amendments to the HSA and PSRO laws.

A number of program initiatives are possible to encourage the development of HSA-PSRO relationships. Among them are regulations on the confidentiality of PSRO data and PSRO responsibilities to provide data to HSAs, modifications of the March 26 regulations, and technical assistance in establishing data systems and organizational structures that will minimize the problems associated with geographic incongruence.

ABSTRACT: Institutional indicators of performance, commonly the basis of health planning systems, are useful for many purposes but cannot be used as surrogates for population-based data. Data obtained from Maine and Vermont are examined, showing wide contrasts in incidence of hospitalization, patient days of care, available beds and expenditures for hospital care. An example cited is per capita cost for hospitalization for nine common surgical procedures, ranging among 13 Maine hospital service areas from a low of \$11.93 to a high of \$29.31.

"Sec. 1502. The Congress finds that the following deserve priority consideration in the formulation of national health planning goals and in the development and operation of Federal, State, and area health planning and resources development programs: . . . (6) The promotion of activities to achieve needed improvements in the quality of health services . . . (9) The adoption of . . . utilization reporting systems . . ."

Section 1502 (9) and (6)

Using Localized, Population-based Data in Evaluating Planning Problems

John E. Wennberg, M.D.*

This paper examines a number of issues important to health planners, using localized, population-based data gathered from two New England States, Maine and Vermont. Data of this kind are unique in that they provide insights which are obscured when the conventional institutional indicators of performance are used or when data are based only on large geographical areas.

To obtain data of this kind it is necessary to gather information in sufficient detail so that it can be related to small geographical areas and individual communities. The Maine data in this paper come from an analysis of all uniform discharge abstracts issued by Maine hospitals in the calendar year 1973, classified according to patient residence in one or another of 42 hospital service areas.^{1,2,3,4} In this paper, contrasts are between the five largest areas, each with populations in excess of 50,000. The Vermont data are from a reporting system instituted in that State in 1969 which monitors aspects of health care delivery in each of the State's 251 towns.⁵ An interview sample survey of about 2,500 Vermont households also contributes to the data base.

Aggregate data at the State and national level may tell us something about the characteristics of health care systems in general but they tell little of practical value for making decisions that affect the supply of health care or the utilization of services for a specific community within the jurisdiction of a planning or regulatory agency. Institutional indicators of performance, commonly the basis of health planning

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1. Wennberg, J. E., A. Gittelsohn: Health care delivery in Maine I: Patterns of use of common surgical procedures. *J Maine Med Assoc* 66(5):123-130 and 149. 1975.
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system, are useful for many purposes but cannot be used as surrogates for population-based data.

This paper will provide many examples of the different perspectives provided by population-based data as opposed to institutional indicators. As an introduction, Table 1 has been prepared to show such differences in hospital utilization in the five largest hospital service areas of Maine.

The traditional indicators in this Table are percent of occupancy, average length of stay, and bed turnover rate. As will be seen, these are nearly identical in four of the five areas.

The population indicators are incidence of hospitalization, patient days of care, available beds per 1,000 population and per capita expenditures for hospital care. In contrast to the institutional indicators, they show great differences among the five areas.

The patient days of care, as will be seen, vary from 831 days per 1,000 persons per year in one area to 1,625 days in another. The area with the highest bed rate (Area IV) has the highest rate of hospitalization, the most patient days, the highest per capita expenditures, and the most available beds. When the case mix was reviewed, this area was found to have a high rate of elective surgical procedures, particularly tonsillectomy and hemorrhoidectomy. Area IV's length of stay is nearly the same as Area V, which has the lowest incidence rate and the lowest per capita expenditures of the five areas.

It is apparent that the conventional institutional indicators fail to show essential differences in health care between areas. This is more than a disadvantage and more than a technical issue. It involves the proposition of how the health care world is viewed; whether the perspective of the populations who receive care should be considered alongside the perspectives of the institutions that furnish care. Without localized, population-based data, in short, it is impossible to distinguish variations in health care systems and to evaluate the health care market which planners move to affect.

The Problem of the Effectiveness of Health Care

Skepticism should be a built-in analytical tool or screening device in evaluating health care systems. The contemporary case for skepticism stems from two separate arguments.

First, there is the argument of relevancy. It is apparent that effective prevention or cure for the bulk of modern chronic illnesses depends on the modification of individual behavior or the mores of society. Such prevention and cures do not depend on the administration of personal health services. Industrial and personal pollutions, nutrition, drug and tobacco abuse, exercise habits and other aspects of personal or collective lifestyles are decisive factors determining the rates of chronic illnesses, particularly heart disease, cancer and respiratory disease. "Provider"-administered preventives and therapies have little to do with

Table 1. Indicators of performance in 5 largest Maine Hospital Service Areas by population data and institutional indicators.

	Population data			Institutional indicators			
	Per 1,000 population Incidence of hospitalization ¹	Patient days of care ¹	Available beds ²	Per capita Expenditures ²	Percent Occupancy ²	Average length of stay in days ¹	Annual bed turnover rate ²
Area I	145	1,104	4.1	\$102	73	7.6	33
Area II	153	1,244	5.0	92	73	8.1	31
Area III	157	1,054	4.2	75	65	6.7	34
Area IV	235	1,625	5.7	109	72	7.0	39
Area V	127	831	3.8	72	72	6.6	32

1. 1973 data (incidence rate is age-adjusted)

2. 1971 data

Source: Wennberg, J.E., A. Gittelsohn, N. Shapiro. Health care delivery in Maine III: Evaluating the level of hospital performance. J Maine Med Assoc 66(11): 298-306. November 1975.

these rates and are, for the most part, palliative rather than curing in their effects upon individuals with these conditions.⁶

Second, there is uncertainty among the profession. Physicians differ in their diagnosis of "need" and/or their beliefs about the value of specific ways of treating illnesses. Existing evidence does not substantiate claims for effectiveness of many common medical and surgical practices. Nor does it refute them. Although the need to demonstrate the effectiveness of pharmaceuticals has been recognized, new technologies associated with common medical and surgical practices are adopted without adequate evaluation.

The problem of effectiveness has been extensively studied by Prof. Archie Cochrane who draws attention to the impossibility of evaluating the cost-benefits of curative medicine delivered under the British National Health Service: the only certainty is the cost.⁷ Common therapies pass in and out of vogue; thyroid and thymus irradiation, colonic irrigation, and hormone treatment for threatened abortion are historic examples of the problem. Contemporary examples of therapies of uncertain value include many of the common surgical procedures (including, still, tonsillectomies), coronary care units, coronary by-pass surgery, radical versus simple mastectomy for cancer of the breast and oral hypoglycemic agents in the treatment of diabetes.

The cause of fetal monitoring is a current illustration of the importance of evaluating claims for efficacy. Between 1969 and 1974 a rapid change took place in obstetrical practice in certain parts of Vermont in the concept of abnormality. Among mothers living in areas served principally by university hospitals, the percent of deliveries diagnosed as abnormal rose from 23 percent to 44 percent. In contrast, deliveries among women living in non-university areas were diagnosed as "abnormal" about 23 percent of the time in each year.

Over a similar period of time, the Cesarean section rate doubled in the university area from 5.9 percent in 1969 to 9.6 percent in 1973; in 1974 the rate is estimated at 12 percent. The non-university area changed from 4.3 percent to 5.3 percent from 1969 to 1973.

These changes in labeling and in use of Cesarean appear to be largely due to the adoption of electronic techniques for monitoring various physiological parameters of the fetus, the so-called "fetal monitoring" techniques. The application of this technology appears to have resulted in a profound intervention into a basic strategy of evolution, natural vaginal birth. A commonly heard estimate is that between 12 percent and 18 percent of births will be Cesarean once the steady state is reached.⁸

The circumstances of this innovation can be simplified without distortion of the policy implications. "Break-throughs" in the electronics

6. Examples of the policy options that follow this perspective on the limited relevance of contemporary health care to the health of the population have recently been reviewed by Marc Lalonde, Minister of National Health and Welfare, Canada: A new perspective on the health of Canadians, a working document. Ottawa, April 1974. Also, by the U.S. Department of Health, Education, and Welfare: Forward plan for health FY 1978-1982. Washington, D.C. 1976.

7. Cochrane, A. L.: Effectiveness and efficiency: Random reflections on health services. Nuffield Provincial Hospital Trust, London. 1972.

8. Washington Post, January 5, 1976.

industry have improved techniques for monitoring in "real-time" the electrical phenomena of the heart, and various patterns of fetal heart rate can now be observed. Theories and inductions brought to these variations lead to predictions about the natural outcome of the process of birth. This leads some physicians to a strategy of intervention through Cesarean section or other means.

Explicit theorizing and experimental interventions are more common in medical schools. It is not surprising that the rapid changes in standards or measures of normality and use of Cesarean is observed first among mothers who live in areas served by university hospitals.

Does this change in use of technology improve health? Unfortunately, the answer is not clear. Like most changes in the technologies of common medical practices (where controlled clinical trials are rarely done), inferences on the relationship between the altered pediatric and obstetric practices and outcome changes are difficult to make.⁹

This uncertainty includes more than the relationship with perinatal and neonatal mortality. The more important issue may well be the quality of survival of the infants who do not die. It is plausible that the joint (or separate) efforts of the neonatologists and obstetricians are saving the marginal fetus who, under natural selection or the old set of medical practices, would have died. It is plausible that these infants, once over their pre- and peri-natal problems live normal "productive" lives. It is equally plausible that some members of this cohort of infants, despite the efforts of medicine, have little prospects for a "normal" life. Other specifications of the benefits and costs of the changes are equally plausible.

What does seem clear is that interventions which assuage professional uncertainty at one level—that of interpreting new information about biologic processes—have served to increase uncertainty at a second level, that of the effect of medical interventions on populations.

Unlike new drugs, new therapeutic and diagnostic procedures may be adopted into the conventional wisdom of clinical practice without specific requirements concerning the quality of the evidence concerning their effects on health status.

Neglect of the problem of effectiveness in the first instance—at the time of the introduction of new technology—can be blamed for much of the present uncertainty concerning the value of common medical practices. If the issue continues to be neglected, there can be little hope for rational planning based on information about the relationship between specific health care practices and health status. Further, there can be little hope for controlling costs, as demonstrated by the case of changing obstetric practices: the relatively low purchase price to a hospital for the fetal monitoring technology places it far below the minimum capital

9. The sole reported randomized clinical trial of fetal monitoring (versus nurse auscultation) demonstrates no improvement in fetal outcomes among monitored mothers. Cesarean sections occurred in 16.5% of mothers treated with monitors. Among the auscultated group, the Cesarean rate was 6.8%. Maternal complications were more frequent among the monitored group. Cf. Haverkamp, A. D., H. E. Thompson, J. G. McFee, C. Cetrulo: The evaluation of continuous fetal heart monitoring in high risk pregnancy. In press, 1975.

investment requiring planning agency review, yet the associated changes in cost of medical care is large, greater than that associated with many capital investments which the agency is required to review.

The Costs of Uncertainty

The dollar cost implications of the varying strategies for allocation of the common practices of medicine can be appreciated by comparing the per capita rates of hospitalization expenditures for nine common surgical procedures among the 13 largest Maine Hospital Service Areas (Table 2). In the areas of highest incidence, total per capita cost (for hospitalization alone) of the nine procedures is \$29.31; in areas of lowest incidence, total cost of the nine procedures is \$11.93. If the high-use strategy were the "medically necessary" level of care, it would take (at 1973 Maine costs) \$6.3 billion to provide these services across the nation. In contrast, if the low-use strategy were generalized, \$2.5 billion would be required. The potential savings for the nation for these nine procedures alone should be adequate reason for determining which level is appropriate. The dollar cost of uncertainty for them is \$3.8 billion or about 10 percent of the 1973 national investment in hospital care.

Table 2. Per capita hospitalization expenditures for nine common procedures in areas with highest and lowest incidence rates, 13 largest Maine Hospital Service Areas and State average, 1973.

Procedure	High use area ¹	Low use area ¹	State average
Hysterectomy	\$ 6.78	\$ 2.88	\$ 4.30
Cholecystectomy ²	4.98	2.51	3.45
Prostatectomy	3.54	1.47	2.34
Tonsillectomy	4.55	0.85	2.33
Hernia ³	2.51	1.64	1.99
Dilation and Curettage	2.68	1.08	1.82
Appendectomy	1.99	0.97	1.47
Hemorrhoidectomy	1.43	0.23	0.54
Varicose Veins	0.93	0.30	0.48
All Nine Procedures	29.39	11.93	18.73

¹ Areas ranked independently on each procedure

² For females only

³ For males only

Source: Wennberg, J. E., A. Gittelsohn: Health care delivery in Maine I: Patterns of use of common surgical procedures. *J Maine Med Assoc* 66:5, pp. 123-130 and 149.

The Possibilities for Iatrogenesis

The costs to patients in terms of morbidity and mortality of the varying strategies are unknown. The outcomes of one type of care as compared to another—including the option of no intervention—are often not explicit and the implications of the various levels of application of a procedure cannot easily be evaluated in terms of quality of life of the

recipients. But, given the magnitude of the variations, the possibility of too much medical care and the attendant likelihood of iatrogenic effects would appear as strong as the possibility of not enough care and its attendant morbidity and mortality.

The possibility of iatrogenic illness is particularly significant when invasive medical care is undertaken for conditions that pose no intrinsic threat to longevity. While the impact of such treatments on morbidity or quality of life and patient satisfaction may be unevaluated, the impact of such care on longevity can be assumed to be negative, since below some small number, risk of death from an untoward event (for example, an anesthetic death) is irreducible. Populations who receive more intervention (of equal technical skill) will have marginally higher rates of death when compared to an otherwise similar population who receives less.

Those considerations lend particular emphasis to Cochrane's advice: the point of departure in the evaluation of health services should be the null hypothesis: therapy should be considered ineffective unless there is evidence to the contrary.

Planners, and Assumptions about Effectiveness

Public policymakers have not taken professional uncertainty concerning the effectiveness of common medical practices adequately into account. In fact, most planning efforts have been undertaken under a false assumption of the opposite, an assumption that an underlying professional consensus guides the market for health care services toward rationality, and that given adequate supplies and financing systems standing ready to pay, human and capital resources will be translated into effective services through the invisible hand of a professional consensus that identifies need and dispenses adequate therapies. This unfounded viewpoint has had a profound influence on the nature of public involvement in planning and regulation of health services.

Facility Decisions

Decisions to increase the supply of facilities (particularly under the Hill-Burton legislation) have been based on planning formulae that investigate only the rate of utilization at the institution that is seeking facilities and only in terms of the percent of occupancy. The objective of the planning process has been to assure that beds are available when needed by the marginal patient, without respect to the per capita utilization rates among the population who receives the services. The content of utilization—the case mix of common surgical or medical admissions—has not been viewed as proper datum to take into account when making determinations of need for additional hospital facilities.

In Vermont and Maine, this strategy has led to planning decisions which are paradoxical when viewed from the perspective of the population at risk: hospitals serving areas with low per capita utilization rates and low rates of surgery have been determined by the Hill-Burton agency to have "low need" for additional facilities; those with rates considerably above the average have been assigned "high need" profiles.

The building projects monitored in Vermont since 1969 are in many cases located in areas with historically higher than average rates of utilization.

Manpower Planning

In the case of health manpower training, particularly the education of physicians, the public sector has once again relied on the invisible hand of professional consensus to allocate the products of educational process among the various specialties in a rational manner. In an effort to increase supply, public subsidies for the production of medical manpower have been generous at all levels of training, including the post-graduate education of physicians. The policy assumption behind these subsidies is that more and better trained personnel are needed. Geographic and specialty choices by physicians are left to professionals, presumably based on the assumption that they have an understanding of what services are needed and which type of personnel best provide them.

In Vermont and Maine, the specialty composition of the cohort of physicians serving the different hospital service areas varies considerably, but there is little evidence that professionally defined "need" for the services of specific types of specialists "clears" the area of all potentially "treatable" problems. For example, an area currently receiving the greatest quantity of surgery can readily receive more of several common surgical procedures without exceeding the rates of use in neighboring communities. (See Figure 1).

Regulation of Utilization

In its role as regulator of the market for personal health service, the public sector commonly assumes that professional consensus is effective in minimizing the marginal, costly example of medically unnecessary care. A prime target is length of stay in hospital. In implementing the Professional Standard Review Organization programs, the emphasis is on setting specific standards for length of stay for diagnostic and surgical procedures. Significantly, in raising the question of medical necessity, the more fundamental issue of the health-producing effects of the intervention itself receives little attention.

In Vermont and Maine, variations among physicians in their judgments on the need to use hospitals and surgery appear to be the important determinant of variations in use of resources. While the cost per case and length of stay shows some variation among areas, they are of a lesser range and bear no relationship to variations in admission rate; by far the most important determinant of per capita expenditures and bed use is the decision to admit to hospital or use surgery. The intensity of care delivered after admission—as measured by cost per case or length of stay—is of secondary importance.

Because we are not yet ready to put in place a requirement for acceptable evidence that the admission or the surgery is efficacious, a strategy of reducing length of stay may initially appear to be sensible. However, paradoxically, such a procedure by the PSRO may increase the

Figure 1. Ratio of observed to statistically predicted number of selected surgical procedures, 5 largest Hospital Service Areas, Maine, 1975.

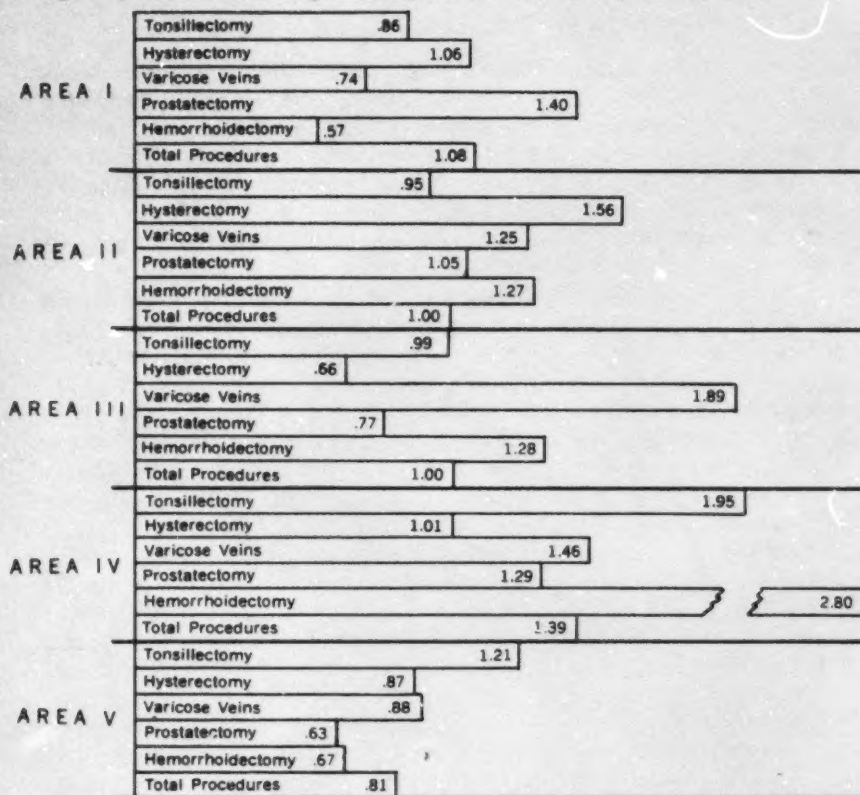


Figure 1 gives the ratio of the observed to the statistically predicted, "expected" number of selected surgical procedures occurring in the five largest Hospital Service Areas in Maine. The expected number is the age-corrected number of cases that would occur in each area if the State average rate applied. The figure shows that the rates at which specific procedures are performed within an area vary markedly and to a large degree independently of the total operation rate: For example, while Area II and Area III have the same total operation rate, Area II exceeds in hysterectomies (doing 56% more than the State average) and Area III exceeds in varicose veins (doing 84% more than the State average). In contrast, in Area III, the hysterectomy rate is well below the State average and one-third the rate in Area II. Of the five procedures, in each of the five areas a different procedure is performed most often; in four of the five areas, the least performed procedure is different.

Source: Wennberg, J. E., Gittelsohn, A.: Health Care Delivery in Maine I: Patterns of use of common surgical procedures. *J Maine Med Assoc* 66 (5) 127, 1975

rate of use of hospitals and overall per capita expenditures by freeing available beds for additional questionable admissions.

The Problem of Equity in Light of Professional Uncertainty

Across a wide spectrum of political economies, the goal of an equitable health care system is shared by most industrialized nations. In the United States, equity is conceived as equal access to health care by all members of society, based solely on their individual needs. The public sector has attempted to achieve this through insurance subsidies to specific target populations, the poor and the elderly. Most of the proposed plans for national health insurance would extend this essentially income-redistribution model of equity.

In both private and public systems, the ambiguities of professional definition of need and belief in effectiveness have not been taken into account in the construction of the insurance market. Insurance is viewed as a risk-pooling device, as a hedge against the randomness of costly illness. It is assumed that once contact is made with the system, the care provided is generally of value and more or less similar for the same illness.

The distribution of insurance benefits from both public and private markets among Vermont hospital service areas illustrates what is wrong with this assumption. Across neighboring Vermont areas, equal initiating contact for episodes of illness with the system occurs among the elderly, among the poor and among everyone else. Yet contact among these apparently similar cohorts of people results in variable applications of health care technology and is followed by varying per capita expenditures and reimbursements.

The case of tonsillectomy illustrates this problem.

Children of the different Vermont areas contact their physicians at similar rates for upper respiratory infections but the percent of children within an area who receive tonsillectomy varies from 8 percent to 63 percent. It is not clear that children are healthier for the operative experience in the high areas, but who pays for whose tonsillectomy is directly seen. For most examples of public and private insurance available in Vermont markets, each subscriber pays a similar price for similar insurance, without regard to place of residence. A fraction of the premium is insurance against the random illness that leads to tonsillectomy. But, it turns out, the probability of tonsillectomy is random only in the sense that place of residence is random; estimated annual per capita expenditure for tonsillectomy in Vermont (1969-1970) varied from \$.63 to \$5.69. Rather than differences in illness rates, essentially external or exogenous factors, the vagaries of location and professional preferences for therapy determine that people living in the low-use area subsidize the tonsillectomies consumed by those in the high cost area.

Income Redistribution Among Communities

In the aggregate, the subsidies across areas for the varieties of approach to diagnosing and treating illness may not even out.

In Vermont the people and their illness appear to be the same in the

high and in the low areas. Yet, in the high expenditure area, benefits paid out in 1969 by Blue Cross/Blue Shield and Medicare exceed by \$67 per enrolled individual (not family) the amount contributed locally to those programs.

Income redistribution brought about by the Medicare program is illustrated in Figure 2.

Other Market Implications

The income redistributive features of health insurance have additional implications. Although less clear as to effect, the uncoupling of local rates of consumption from local price of insurance undoubtedly works toward encouraging rather than restricting the growth of local health care organizations. If the cost of local growth were reflected differentially in the cost of local price of insurance, local enthusiasm for growth might be replaced by searching questions as to whether more is better.

Summary

The following illustrates the types of issues and questions which can be raised or answered when localized, population-based data are available.

A fundamental observation about the performance of the health care systems among geographic subdivisions of Vermont and Maine is large variations in per capita use of health care, particularly hospitalized care. In both States, the variation among hospital service areas is two-fold for per capita expenditures for hospital care. In Vermont, per capita reimbursements under Medicare Part B show a three-fold range of variation.

Is there equal access to primary initiating care among the hospital service areas? (Primary initiating care is the initial point of contact which brings the patient to the health care system and which opens the door to subsequent services provided by the system, particularly hospitalization and surgery.)

Assuming the physician is the point of contact to care, access to primary initiating care is equal among the areas at the extremes of the range of variation in hospital expenditures, Medicare Part B reimbursements, and in hospital admission and surgery rates: the population living in these areas contact their physicians in similar proportions on an annual and on an episode-of-illness basis.

Is there equal access to care among the poor and the non-poor? For episodes of illness and for hospitalizations, the portion of those below poverty and those above poverty who use services is similar. For preventive services (such as Papanicolaou test for cervical cancer) and for dental care, the non-poor use services more frequently.

Are the personal resources available to individuals seeking care similar between the hospital service areas?

Personal resources of individuals and families appear to be the same in areas of high and areas of low use of hospitals: the populations-at-risk are similar in extent and variety of insurance coverage, portion below poverty, racial background and in rates of reported illnesses. Nearly all

Figure 2. Estimated Medicare Part B reimbursement per enrollee by Hospital Service Area of residence of enrollee, Vermont, 1972.

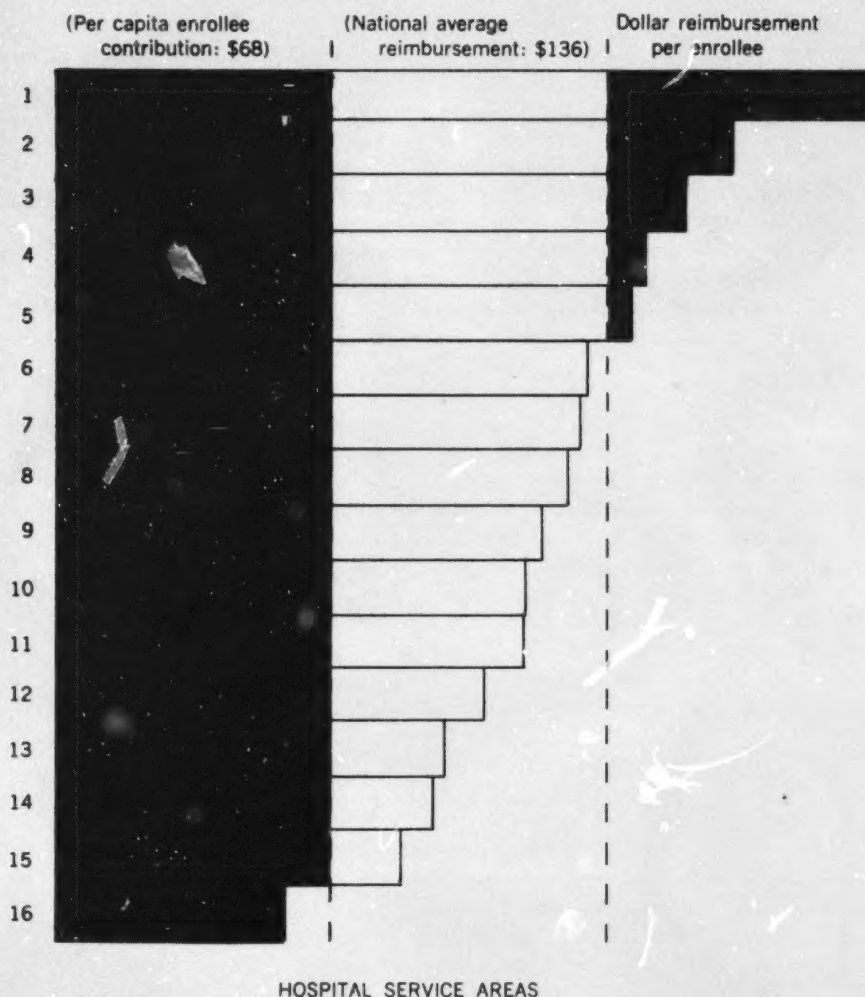


Figure 2 shows for each of 16 Vermont Hospital Service Areas the estimated per capita reimbursements under Medicare Part B. Per enrollee reimbursements in the lowest hospital service area are less than one-third those in the highest area. Enrollees living in Area 16 receive less on a per capita basis than they contribute through the enrollment premium. Residents in Areas 11-15 receive in benefits an amount equal to their own contribution to the program plus an incomplete portion of the average Federal contribution. In addition to their own and the Federal contribution, residents in Areas 1-5 effectively receive contributions from areas with lower than average reimbursements. Estimates are made from a complete sample of Medicare Part B billings processed in the first two months of 1972; place of residence is estimated by post office zip code. Data are unpublished.

have a personal physician; the mean distance to the local hospital is similar; the percentage of occupancy of the hospital is also similar and in a range indicating that beds are available if needed.

How does the extent of post-primary care differ among the areas?

Although little is known about variations in technical proficiencies of human skills in caring, the impact on populations of medicine and surgery are strikingly different: for the tonsil, the probability of removal ranges from 8 percent to 63 percent for resident children; the probability of loss of uterus ranges from 24 percent to 52 percent; for the appendix from 7 percent to 17 percent and for the gall bladder from 11 percent to 31 percent. Non-surgical interventions show similarly large differences in population-based impact: the range of variation for hospitalizations for bronchitis and upper respiratory tract infections is seven-fold and per capita reimbursements for diagnostic x-rays, electrocardiograms and laboratory services show similar differences among areas.

Do the differences in extent of post-primary care relate to differences in distribution of a community's provider resources?

Although the percent of occupancy of local hospitals tends to be low and unrelated statistically to per capita utilization, the bed availability, measured in terms of per capita beds shows about a two-fold range of variation among areas. The types of available physicians vary considerably among the areas: the ratio of high to low per capita supply rates for surgeons is three; for general practitioners (who do not do surgery) the ratio is four; for internists, three.

The total quality of institutionalized care and surgery use in an area appears to be highly dependent on beds and the specialty characteristics of physicians with whom the residents of an area come in contact: areas served by proportionately more surgeons receive more surgery and have higher admission rates to hospitals. Those served by more internists have higher expenditures for hospital and greater reimbursements for lab tests, x-rays and electrocardiograms. Those served by more general practitioners who do not perform surgery have lower use of hospitals and surgery.

However, the specific type of technology employed is to an important extent independent of supply. Although the total surgery rate among neighboring areas may be the same, the technology is allocated differently among the available procedures: in the five largest Maine hospital service areas, patterns of allocation of common procedures are strikingly different, even though the overall rate of surgery is similar in three of the areas (see Figure 1).

Are the costs of post-primary care reasonable?

While the question of the reasonableness of cost cannot be directly answered by the data, the question can be more meaningfully phrased: is it more reasonable to spend \$.50 per capita for tonsillectomy than \$5.50? Is it more reasonable to spend \$2.50 or \$17.25 per capita for laboratory services for enrollees under the Medicare program? Which level of utilization is "necessary"? Which carries an excessive burden of iatrogenesis?

ABSTRACT: Procedures are described for determining the amounts of inappropriate utilization of acute and sub-acute facilities within a region and integrating this information into regional health plans. Without identification of inappropriate utilization, unnecessary capital and operating costs may go to acute facilities, and quality of care may be adversely affected to the extent that delivery, amount and timing of services at given levels of care are not consistent with patients' medical care needs.

"Sec. 1502. The Congress finds that the following deserve priority consideration in the formulation of national health planning goals and in the development and operation of Federal, State, and area health planning and resources development programs: . . . (6) The promotion of activities to achieve needed improvements in the quality of health services, including needs identified by the review activities of Professional Standards Review Organizations under part B of title XI of the Social Security Act. (7) The development by health service institutions of the capacity to provide various levels of care (including intensive care, acute general care, and extended care) on a geographically integrated basis . . ."

Section 1502 (7) and Section 1502 (6) Determining Appropriate Levels of Care

Don C. Holloway, Ph.D., Joseph D. Restuccia, Dr.P.H., and Edward Sondik, Ph.D.*

The approach set forth in this paper has two complementary objectives: to present a method to determine "appropriate" utilization rates for acute and sub-acute facilities that will take into account the amount of inappropriate utilization of these facilities, and to consider how the consequent data may be integrated into planning methods that will assist health planners develop regional health care plans.

The recommendations relate primarily to priority (7) of Section 1502, which sets forth the need to provide various levels of appropriate health care (including intensive care, acute general care, and extended care) on a geographically integrated basis. They are also relevant to priority (6), which is concerned with relationships between Health Systems Agencies and Professional Standard Review Organizations (PSROs).

The projection of utilization rates is an integral part of most health facilities planning methodologies. Utilization rates for particular levels of care (acute facilities, skilled nursing facility, home health care, outpatient care, etc.) typically contain a portion of patients who are inappropriately located in a facility.^{2,3,4} Using such rates to forecast future demand results in bed-need estimates that include an unknown proportion of patients who could have been in an alternative facility.

When the amount of inappropriate utilization is not identified a number of serious consequences may occur. Potential problems include: unnecessary capital and operating costs may be spent on acute facilities if, for example, some patients could have been in less costly facilities; excess supply of higher levels of care may generate a portion of unnecessarily derived demand;⁵ demand for lower levels "hidden" in higher levels of care may result in supply of lower levels being less than actual need; and quality of care may be adversely affected to the extent

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1. Holloway, D. C., J. D. Restuccia, E. Sondik and K. P. Kuskey: Level of care decisions by PSROs for health facility planning. Presented at conference/workshop on national health policy issues, San Francisco, Calif., February 12-13, 1976.
2. Berg, R. L., F. E. Browning, S. L. Crump and W. Wenkert: Bed utilization studies for community planning. JAMA 207:2411, March 31, 1969.
3. Gertman, M. and B. M. Bucher: Inappropriate hospital bed days and their relationship to length of stay parameters. Presented at Medical Care Section, 99th annual meeting APHA, Minneapolis, Minn., October 1969.
4. Querido, A.: Analysis of length of stay. In *The efficiency of medical care*. H. E. Stenfort Kroese, Leiden, 1963.
5. Roemer, M. J.: Bed supply and hospital utilization: A natural experiment. *Hospitals*. 35:36-42, November 1, 1961.

that delivery, amount and timing of services available at given levels of care are not consistent with patients' medical care needs.

What is required is the development of explicit criteria for deciding between levels of care for patients placed in facilities for diagnosis and treatment. These criteria should be applied to a sample of patients in the facilities in the planning region. The resulting data on inappropriately located patients found to be both too high and too low for their needs, and the barriers to appropriate location, should be used in regional health care plans.

The rationale behind the approach we propose is that information on inappropriate utilization and its causes is of significant potential value to Health Systems Agencies as well as PSROs. To PSROs, this information will be useful for purposes of evaluating appropriate use of health care resources; to the Agencies, for projecting health planning needs; and to both organizations, for effecting changes in health delivery leading to more effective and economical allocation of health care resources. However, this means the criteria to be used by providers when deciding between one level of care and another for patients should be agreed upon by PSROs and the Agencies and by Medicare and Medicaid program administrators as well.

Current Health Planning

Health Systems Agencies will be particularly concerned with the population's access to health care and the cost of health care within their areas. The Agencies shoulder a responsibility to encourage the various components of the regional health care system to interact in an effective yet economical way to provide regional health care.

Agencies periodically develop a health care plan for their region that documents the current state of the health system, identifies health care deficits, identifies areas where costs are excessive, and identifies significant trends in health care delivery. Also included in the plan are developmental directions for the regional health care system. This plan becomes the basis for evaluating development proposals in the so-called "certificate of need" review process. Our proposal is directed toward a significant addition to the methodology widely used for plan development and the analysis procedures used in the review process.

In the past, plans were usually based on the projections for health care demand developed from the relatively simplistic Hill-Burton methodology. This is described in detail elsewhere;⁶ it suffices to say here that estimates of future demand were based on various categories of beds and oriented toward particular sub-regions within the Area. The estimates were based wholly upon current utilization and future population projections. The notion of levels of care was included only in the major categories of beds, which included medical-surgical, pediatric, obstetric, psychiatric and skilled nursing among other categorizations. The notion

6. Decision analysis in regional health planning. National Technical Information Service, Springfield, Va.

of the appropriateness of the level of care received by a particular patient was nowhere taken into account by this methodology.

Our proposal relates strongly to a second task of the Agencies. Under Section 1513(d)(1) of the Act, "... each health systems agency shall coordinate its activities with ... each Professional Standards Review Organization (designated under Section 1152 of the Social Security Act)." Since assuring the appropriate utilization of health care facilities is an objective of the Professional Standards Review (PSRO) program, we thus see the development proposed here as providing a basis for needed coordination between the HSAs and the PSROs.

Changes in Health Planning Procedures

The proposal as outlined below consists of ten steps. The first five relate to the question of assessing levels of care, determining amounts of appropriate utilization, and identifying and measuring the significance of barriers to appropriate utilization.

1. Developing Levels of Care Criteria

Agencies should develop explicit criteria for deciding between the following levels of care for diagnosing and treating patients: acute care hospitals, surgicenters, hospital based skilled nursing facilities, free standing skilled nursing facilities, intermediate care facilities, home health agencies, ambulatory care, and home placement with no care.

Whenever possible, the criteria should be based on existing guidelines contained in coverage requirements of the Medicare and Medicaid programs,⁷ State licensing requirements,⁸ and/or facility planning guidelines of health planning agencies. For those levels of care not adequately treated in existing guidelines (e.g., surgicenter) explicit criteria should be developed through use of a Delphi questionnaire¹⁰ with participants selected from physicians, nurses, administrators, planners, and other professionals with expertise in that level of care.

Under Medicaid, the "appropriate" location for an individual patient is the most economical facility that can still provide the sufficient types and amounts of services needed by that patient. In the Medicare program, the legal determinant for reimbursement for continued hospital stay has always been the level of care medically needed by the patient.¹¹

The following guidelines can be extracted from the Medicare Hospital and Extended Care Facility Manuals or the Medicare Part A Intermediary Manual. These guidelines, however, require periodic updating as new regulations are promulgated. A Medicare patient is appropriately located

7. Social Security Administration: Federal health insurance for the aged and disabled. 40FR23974.

8. Social Security Administration: Health insurance for the aged; extended care manual HIM-12, home health manual HIM-11, and hospital manual HIM-10.

9. For example, California Department of Health: General acute care hospital regulations 22:5:1; skilled nursing facility regulations 22:5:3 and intermediate care facilities regulations 22:5:4. Sacramento, July 1975.

10. Starkweather, D. B., L. Gelwicks and R. Newcomer: Delphi forecasting of health care organizations. Inquiry: 12:39, March 1975.

11. Flynn, P. F.: Criteria for levels of care evaluation under Medicare. California Medicine: 119:80, 1973.

in a hospital if the following statements about the patient are applicable: 1) the services the patient is receiving cannot ordinarily be safely and adequately performed by the average, non-medical, rational person without direct supervision of trained medical and paramedical personnel; 2) the patient requires direct skilled nursing services at least once a day or the unstabilized condition of the patient requires the skills of a nurse to detect and evaluate the patient's need for possible modification of treatment or institution of medical procedures and 3) the patient requires constant availability of medical services provided by a hospital and not available in skilled nursing facilities.¹²

2. Decision Flow Sheets

The criteria should be formulated into decision flow sheets to facilitate consistent level-of-care assessments by medically trained personnel such as utilization review nurse coordinators. Holloway and his colleagues at the Hospital Utilization Review Study have formulated Medicare coverage criteria into decision flowsheets for four levels, acute, skilled nursing facility, home health care, and home with no care or outpatient care only. These flowsheets are described in Davidson¹³ and in Holloway, *et. al.*¹⁴ Using these criteria for assistance, utilization review nurse coordinators have been capable of making valid and reliable assessments of the level of care required by patients.^{15,16} These have been of significant value to Medicare intermediaries, the California Medicaid program, hospital utilization review committees, a developing Health Maintenance Organization and several PSROs.

3. Sample Review of Patients

Select a sample of facilities and patients for levels-of-care assessment. A sample of facilities providing skilled nursing care at each of the levels of care in a designated planning area should be selected. Home with no care could be left out of the sample.

Several alternative techniques should be investigated to determine what is best suited to provide both an accurate assessment of the extent of inappropriate utilization and an accurate assessment of utilization data for health planning purposes. Among the alternative techniques, considered in ascending order of estimated sampling costs, are the following:

- (1) Cross-sectional or point-in-time sampling.

12. Social Security Administration: Hospital manual, Sections 261.1.B.1 and 261.1.B.2, and extended care facility manual Section 211.3.B.

13. Davidson, S., editor: Components and systems for utilization review. In PSRO utilization and audit in patient care. C. V. Mosby, St. Louis, 1976.

14. Holloway, D. C., J. P. Holton, G. A. Goldberg and J. D. Restuccia: Development of hospital levels of care criteria. Health Care Management Review, Summer 1976, pp 61-72.

15. Holloway, D. C., J. D. Restuccia, G. A. Goldberg and R. Fuhrer: Deciding on the appropriate level of care for patients. Proceedings National Cooperative Center for Hospital Management Engineering, Richmond, Va., In press.

16. Kever, C. and D. C. Holloway: Reliability of level of care decisions by utilization review nurse coordinators. Hospital Utilization Review Study, School of Public Health, University of California, Berkeley. Working paper.

(2) Longitudinal sampling of entire patient stays by retrospective utilization review of medical records.

(3) Conditional sampling, a combination of cross-sectional and longitudinal sampling with the former conducted upon all patients in the sample and the latter only upon patients assessed as inappropriately located.

(4) Longitudinal sampling of entire patient stays by concurrent utilization review.

In selecting a particular sampling technique, the cost of the technique must be weighed against the potential value of the resulting data for learning when inappropriate location is likely to occur and the consequent implications for reducing the barriers to appropriate location. We suspect, for example, that barriers occurring towards the end of a patient's stay will be more subject to influence exerted by PSROs and Health Systems Agencies than will those occurring in the middle of a patient's stay.¹⁷ In addition, tests should be conducted to compare concurrent and retrospective level-of-care assessments to determine whether the higher cost of concurrent review is worth incurring due to greater validity and reliability for decision-making.

Based on our experience with acute facilities, we propose that a random day be selected to visit a facility, that all patients be reviewed on that day and their previous days in the facility, and that a return trip be made to review the remaining days. We believe that concurrent review may be required to identify the barrier to appropriate placement, if not the appropriate level of care.

4. Determining Inappropriate Utilization

Determine amounts of inappropriate utilization. For each patient selected in the sample, utilization review nurse coordinators should apply the levels-of-care criteria to assist in deciding whether the patient is appropriately located and, if not, the level of care which would be appropriate. By conducting level-of-care assessments of sub-acute as well as acute facilities, underutilization (i.e., a patient located in a lower level of care than is appropriate) can be estimated as well as overutilization.

5. Barriers to Appropriate Utilization

Identify and measure the significance of barriers to appropriate utilization. Whenever the nurse coordinator decides that a patient does not meet the applicable levels-of-care criteria, the coordinator should identify the particular barrier causing the patient to remain in that facility (barrier to transfer) or preventing the patient from receiving ordered services (barrier to efficient delivery or services.)¹⁸ Thus, each day assessed to be inappropriate for the level of care at which the patient is located will be associated with a particular barrier.

17. Restuccia, J. D. and D. C. Holloway: Barriers to appropriate utilization of an acute facility. *Med Care*, July 1976.

18. *Ibid.*

By identifying barriers to appropriate utilization, both PSRO's and Health Systems Agencies will have the information necessary to recommend changes to facilities for improving their effectiveness.

The following four steps relate to the regional health planning component of this proposal. They center about two major activities: the extension of existing planning models to use the information developed from the utilization review procedures and the exploration of potential uses of this information by agency planners to pursue the reasons for, and, where possible, the elimination of the barriers to appropriate utilization.

6. Modifying Health Planning Models

Modify existing health planning models and develop new models and procedures as required for incorporating the level of care data in estimates of future utilization. The major step in modifying existing models to account for utilization review data is to translate the data into modified admissions rates for the various facilities and into modified lengths of stay. Multiplying these two numbers will give the modified number of patient days.

The current planning models analyze utilization only by specific bed type. The models incorporate no prescriptive or normative notion of the appropriateness of care or adjustments based on the actual utilization. The methods that need to be developed should augment the planning base for the Agencies.

The current base might be characterized as follows: various types of beds are considered where the types are based on licensure categories. The types used in one area for future demand projections are the following: 1) medical-surgical, 2) pediatric, 3) psychiatric, 4) maternity, 5) sub-acute skilled nursing, 6) chronic-care skilled nursing and 7) intermediate care.

The projections for these bed types have been based on the following model which in turn is based on the Hill-Burton methodology.

The need for beds at a future year is estimated by multiplying the forecasted population in the future year, times the current patient days per population member, divided by the number of days the bed can be used in a year (usually 85 or 90 percent occupancy times 365 days).

Levels of care information relating to the difference between appropriate and actual utilization is not now available. We expect that PSRO data will be available one day on routine levels of care assessment. The data should be in the form of fractions of patients in a current level of care who requires a particular level of care.

One approach would be to use these fractions as the basis for adjustments to the standard Hill-Burton methodology. This would be done by multiplying the fraction of patients who should be in one level but are actually in another, times the average number of inappropriate days for those patients. These fractions of inappropriate days would then be redistributed to the appropriate level of care when projecting future bed needs.

While such use has the advantage of simplicity, using the fraction of acute patients that may be transferred to Skilled Nursing Facility (SNF) beds, for example, requires considerable confidence that the planning agency, or other forces, will be able to rectify the inappropriate patient locations by some future date. The barriers to appropriate utilization must be removed and the inappropriate utilization must be reduced. Analysis of the barriers to appropriate utilization, then, is extremely important in applying the data to the projected demand or utilization estimates.

Another problem is that facilities designated as providing a particular level of care may, in reality, be providing a lower level of care. The fraction of patients who should be in an SNF according to the normative level of care criteria and are in an SNF, conceals the fraction of patients who cannot get the services they need. Insufficient reimbursement for example, may prevent the SNF from providing the services the normative criteria say it should.

However, the aggregate number of inappropriate days in an acute care institution could be used as the upper bound on future utilization if the normative level of care criteria were followed. The number would be an upper bound because inappropriate days may occur within a patient's stay and be followed by appropriate days. The question becomes one of the cost of transfer of the patient back and forth between the "appropriate" (in the least-cost sense) levels of care.

7. Barrier Models

Develop criteria or "barrier models" for citing various categories of inappropriate utilization as potentially modifiable. For example, inappropriate utilization related to reimbursement may be significantly affected by changes in reimbursement schemes. The utilization review data coupled with the data on barriers will indicate the potential magnitude of the change. This magnitude, however, must be considered carefully in the light of future actions of the provider. Several examples of barrier reduction should be developed and their effect on various levels of care discussed with planners, administrators and physicians. The outcome of these discussions should be a set of criteria outlining those levels of care that will be affected by the barrier changes.

8. Cost and Quality Indices

A necessary component of the planning model is indices of the cost and quality of services. While the development of more responsive demand models is of importance to regional health planners, the development must be done in concert with methodology development for cost and quality estimation. Public Law 93-641 is motivated by the rising cost of care, but current regional health planning methodology is nearly devoid of cost measures. Generally, cost measures used by comprehensive health planning in its certificate of need reviews are based on the square footage costs of new facilities. The notion of the operating cost of

a facility or the regional cost of providing service is discussed, but has been difficult to quantify.

The cost of enforcing appropriate levels of care needs to be considered. PSROs and the Medicare program, in their desire to reduce costs by getting patients to the lowest level of care needed, may be increasing costs if acute beds, for example, remain empty and capital is spent to increase the size of free-standing SNFs. What would be the effect on total length of stay (in acute plus SNF) if patients were transferred as soon as their medical condition warranted? Is the cost per patient day of a patient in the acute facility, who should be in an SNF, closer to the cost per day of patients appropriately located in the acute or in the SNF? If costs could be billed to insurance programs so that they varied as the level of care, even while the patient was in the same bed, would enforcing levels of care be necessary?

Modification of existing data on the cost and quality indices will be necessary in order to include the utilization review data. Currently, estimates of costs relate to unused beds and the general operating costs of a facility are not specifically related to patient types by various levels of care. This data could be developed from several sources including Medicare, Medicaid, and Blue Cross reimbursement data, facility financial statements, and an analysis of Hospital Administrative Services reports on the cost of care in local facilities of various size and type. The difficulties in obtaining reliable cost data are well known; the current lack of use of cost data in regional planning is in part a reflection of the unreliability of such data. However, the sources we have outlined are perhaps the most reliable sources available, and we believe should produce sufficiently accurate estimates of the cost of care.

To develop quality measures, we propose a simple approach be taken, but one which is perhaps the best that can now be done given the state of the art of facility quality assessment. Many professional organizations have developed standards on the minimum level of utilization of a specific service that is required for minimum standards of quality. For example, the American College of Gynecology and Obstetrics considers 2,000 births per year as a minimum level necessary to maintain the expertise of the nursing staff. Similar standards exist for cardiac catheterization and other services. Enforcing appropriate levels of care may cause the utilization of services within a given facility to drop below these standards. Even though the standards are at best only predictors of quality they point out the trade-off that needs to be included in the planning decision.

9. Data Analysis

As a partial evaluation of the model, plans based upon it should be compared with plans based upon the Hill-Burton approach. In particular, differences in utilization and bed need projections for different levels of care and consequent differences in estimated capital and operating expenses should be investigated.

10. Costs of Sampling

The next and final step in this proposal relates to developing a methodology capable of replication in other planning areas. Costs of different sampling techniques should be recorded and weighed against the reliability of the resultant decisions. In addition, estimates of the cost in adapting this methodology to other planning areas should be made based upon the number, size, and utilization of health facilities in the planning area.

Discussion

The problem of inappropriate location in facilities planning has been addressed in previous studies. The Division of Hospital and Medical Facilities of the U.S. Public Health Service developed a method of facilities planning which incorporates revised estimates of bed need that takes into account inappropriate location in utilization rates.¹⁹ However, this method assumes knowledge about patient days of inappropriate utilization but does not propose how this information can be obtained.

A methodology for obtaining such information, based on level of care assessments, has been developed and implemented in the pioneering study conducted by the University of Rochester School of Medicine and Dentistry in conjunction with the Patient Care Planning Council and Council of Social Agencies of Rochester and Monroe Counties in New York.^{20 21 22 23} This methodology however has several limitations that should be overcome. The study was limited in 1) its reliance upon physicians rather than nurses to perform levels of care assessments, thus incurring high expense in reviewer time; 2) its failure to identify barriers to appropriate utilization that can provide guidelines to actions and resource allocations which might reduce inappropriate utilization; 3) its use of descriptive rather than explicit criteria for level of care assessments (i.e., criteria arranged in a logically sequential format to facilitate decision making and retrospective evaluation of such decisions); 4) its exclusion of levels of care provided by ambulatory medical clinics and surgicenters; 5) its lack of cost-benefit analysis of alternative bed and service configurations at various levels of care; 6) its lack of cost estimates for performing necessary data collection.

We believe that data developed from utilization review will be useful as a base for the Health Service Agency's role in actively working to improve local health service delivery. We expect the study of barriers to appropriate utilization to provide useful data to health planners who wish to develop meaningful consumer-provider joint actions toward improving the health delivery system.

19. Division of Hospitals and Medical Facilities: Estimating needs. In *Procedures for areawide health facility planning*. U.S. Public Health Service Pub. 930-B-3. U.S. Government Printing Office, Washington, D.C., 1963

20. Berg et. al., op. cit.

21. Wenkert, W., J. G. Hill and R. L. Berg: Concepts and methodology in planning patient care services. *Med Care*: 7:327 July-August 1969.

22. Zimmer, J. G.: An evaluation of observer variability in a hospital bed utilization study. *Med Care*: 5:221 July-August 1967.

23. Zimmer, J. G. and E. W. Groomes: An observer reliability study of physicians' nurses' decisions in utilization review of chronic care facilities. *Med Care*: 7:14 January-February 1969.

24. Zimmer, J. G.: Length of stay and hospital bed misutilization. *Med Care*: 12:453, May 1974.

ABSTRACT: A series of 'packages' of preventive medical procedures are proposed which have been developed by a task force of public health experts. (Fogarty International Center-American College of Preventive Medicine, Bethesda, Md. 1975). The packages are designed for particular ages to be administered at appropriate times—several times during pregnancy and infancy, again at school entry and adolescence, thereafter every 5 years during early and middle adult life and every 2 years during later life.

"Sec. 1502. The Congress finds that the following deserve priority consideration in the formulation of national health planning goals and in the development and operation of Federal, State, and area health planning and resources development programs: . . . (8) The promotion of activities for the prevention of disease, including studies of nutritional and environmental factors affecting health and the provision of preventive health care services . . ."

Section 1502 (8)
Prevention in Personal Health Services:
A Task Force Study

*Lester Breslow, M.D., M.P.H.**

In June 1975, the American College of Preventive Medicine and the Fogarty International Center of the National Institutes of Health sponsored a National Conference on Preventive Medicine which dealt with educational, environmental, medical, and other aspects of prevention. This paper presents some of the highlights from the report of the Conference's Task Force III, on Theory and Application of Prevention in Personal Health Services.¹ In the Appendix is presented a substantial excerpt from the report itself.

As a preface, I would speak to the statement, often made, that the United States has no national health policy.

Even though it may not have been explicitly stated, the national health policy during the past quarter-century has been to: (a) expand the biomedical research and the medical education capacity of the nation; (b) build hospital and other health facilities throughout the country; (c) extend medical center care to previously disadvantaged groups, particularly the aged and the poor; and (d) enhance the private sector of medical care through almost doubling the production of GNP committed to medical care, while curtailing the public sector of medical care.

In none of these endeavors has prevention received much attention. Occasionally there are vague reference to its desirability, but not much is done about it.

Now it appears that people are becoming disenchanted with the kind of medical care that has been provided in recent years. Complaints about the cost of services continue to rise. Rumbles about quality get louder. Books berating the medical profession and its present works appear with increasing frequency. Lectures by Ivan Illich are well attended. The Canadian Minister of National Health and Welfare, in "A New Perspective on the Health of Canadians" says:²

"In most minds the health field and the personal medical care system are synonymous. This has been due in large part to the powerful image projected by medicine of its role in the control of infective and parasitic diseases, the advances in surgery, the lowered infant mortality rate and

* Dr. Breslow is Dean, School of Public Health, University of California at Los Angeles. This paper was delivered at a Conference on National Health Policy Issues held in San Francisco, February 12-13, 1976.

1. Preventive Medicine, U.S.A. Prodist Press, New York, 1976.

2. La Londe, Marc: A new perspective on the health of Canadians. Government of Canada. Ottawa, 1974.

the development of new drugs. This image is reinforced by drug advertising, by television series with the physician as hero, and by the faith bordering on awe by which many Canadians relate to their physicians.

"The consequence of the traditional view is that most direct expenditures on health are physician-centered, including medical care, hospital care, laboratory tests and prescription drugs. When one adds dental care and the services of such other professions as optometrists and chiropractors, one finds that close to seven billion dollars a year are spent on a personal health care system which is mainly oriented to treating existing illness."

He then quotes McKeown:³

"Past improvement has been due mainly to modification of behavior and changes in the environment and it is to these same influences that we must look particularly for further advance."

And concludes:

"When the full impact of environment and lifestyle has been assessed . . . there can be no doubt that the traditional view of equating the level of health in Canada with the availability of physicians and hospitals is inadequate. Marvellous though health care services are in Canada in comparison with many other countries, there is little doubt that future improvements in the level of health of Canadians lie mainly in improving the environment, moderating self-imposed risks and adding to our knowledge of human biology."

Meanwhile, there are stirrings in our own country in the direction of prevention. The Forward Plan for Health (1977-1981) of the U.S. Department of Health, Education, and Welfare, published in August 1975, emphasizes prevention as a theme in these words:

"Many of today's health problems are caused by a variety of factors not susceptible to medical solutions or to direct intervention by the health practitioner: we have as yet no vaccine to prevent cancer or to cure alcoholism. This poses a dilemma for health professionals in defining a proper role for themselves in the prevention of disease and a practical problem for those concerned with setting the boundaries of health planning. For planning purposes, for example, it is not realistic to view smoking primarily as a medical problem. It is a major social, economic, cultural, and psychological phenomenon that has profound health implications.

"Similarly, the annual carnage on our highways generates costly demands on the health care system but the behavior of the individual behind the wheel of a speeding car and the condition of the car and highway are determined by social, cultural, and economic factors that have little direct involvement with the health professions.

"In the area of the environment we are seeing increasingly persuasive evidence linking a range of human diseases to our industrial society. Failure to deal with this contamination of our environment could result in

3. McKeown, Thomas: A historical appraisal of the medical task. *In* Medical History and Medical Care. Oxford University Press, 1971.

serious health consequences whose full effects may not be known for decades to come. Clearly this requires attention and action on a scale going far beyond the borders of medicine.

"While scientists do not yet agree on the specific causal relationships, evidence is mounting that the kinds and amount of food and liquor we consume and the style of living common in our generally affluent, sedentary society are major factors associated with cancer, cardiovascular disease, and other chronic illnesses."⁴

"Packages" of Procedures

This attention to lifestyle and nonmedical approaches to health problems should not, however, be taken as substitute for preventive medical services given in the context of medical care. As a matter of fact, a highly important place to influence behavior of people in regard to their health is in the doctor-patient relationship. With this in mind the Task Force reviewed systematically what might be useful that could be incorporated into routine medical practice, both specific medical procedures and counseling.

The Task Force went beyond a review of the empirical and theoretical bases for modern preventive medicine and proposed a set of "packages" of preventive medical procedures. Each package was designed for a particular age at which the services would be especially useful. Instead of an "annual check-up" the plan provides selected services at time of development and change in life when they can be critical. For example, the pregnant woman and fetus would receive certain services and the infant others; every five years, the middle-aged adult man would receive specified procedures.

The exact times and frequency at which the procedures would be provided depend upon the nature and rapidity of bio-social change. Thus, it is important to offer the appropriate procedures several times during pregnancy and infancy, again at school entry and adolescence, thereafter every five years during early and middle adult life and every two years during later life.

In putting forward this program of preventive services the Task Force noted that very similar plans had been prepared by other bodies in the field. These included an ad hoc committee established earlier by the Fogarty International Center; the Association of Schools of Public Health with the Association of Teachers of Preventive Medicine; and the American Public Health Association. The specific services proposed by these four bodies are shown in the accompanying Table.

Although it is clear that some differences exist among the 'packages' of preventive medicine procedures set forth by the four professional groups, these differences are very minor compared to the similarity of the proposals. The principal differences are that the Fogarty Center ad hoc committee called for a somewhat more extensive list of procedures than did the other three. The others differed only mildly in detail.

4. U.S. Public Health Service: Forward plan for health. DHEW Pub. (OS) 76-50024. U.S. Government Printing Office, Washington, D.C., 1975.

Table. Preventive Services proposed by four public health bodies.

1. Mother and Fetus	FIC ¹	ASPH ATPM ²	APHA ³	TF ⁴
History (includes previous pregnancy)	X	X	X	X
Height and weight	X	X	X	X
Blood Pressure	X	X	X	X
Temperature	X			
Physical Examination	X	X	X	X
Dental Examination	X			
Laboratory Examinations				
Hemoglobin/Hematocrit	X	X	X	X
Blood Count, complete			X	
Blood Smear	X			
Rubella Antibody	X			X
Au Antigen	X			
Rh Determination (mother and father)	X	X	X	X
Blood Grouping	X	X	X	X
Biochemical Profile	X			
Blood Sugar				X
Urinalysis, complete	X		X	
Urine-Sugar and Albumen		X		X
VDRL	X	X	X	X
Tuberculin	X			
Gonococcal Culture	X		X	X
Pap Smear	X		X	X
Chest x-ray			X	
Tetanus Immunization	X			
Counseling				
Family Planning	X			
Nutrition	X	X		
Smoking	X	X		
Disorders of Early Pregnancy	X			X
Risks to Developing Fetus	X			X
Abortion	X			
Congenital Anomalies	X			
Labor and Delivery	X	X	X	X
Infant Care	X		X	
Parenthood			X	X
Self Care			X	X
Additional Procedures for Certain Groups				
Cephalometry	X			
Tachodynamometry	X			
Urine Culture	X			X
Urinary Estrogen/Creatinine	X			
Urinary Urea N/Total N	X			
Amniocentesis	X			X
Gamma Globulin	X			
Anti-Rh Titers	X			

See footnotes at end of table.

2. Infant

	FIC ¹	ASPH ATPM ²	APHA ³	TF ⁴
Height and Weight	X	X	X	X
Head Circumference	X			
Vision and Hearing	X			
Physical Examination	X	X	X	X
Development Assessment	X	X	X	X
PKU	X	X		X
Serological Testing			X	
Hematocrit	X			X
Tuberculin	X			
Silver Nitrate Prophylaxis				X
Vitamin K				X
DTP Vaccination	X	X	X	X
TOPV	X	X	X	X
Counseling of Parents				
Nutrition	X	X	X	
Infant Care (includes hygiene and feeding)	X	X	X	X
Accidents	X	X	X	X
Poisons	X			
Infant Behavior		X		

3. Preschool Child

Height and Weight	X	X	X	X
Blood Pressure	X			
Vision and Hearing	X	X	X	X
Speech	X	X		X
Physical Examination	X	X	X	X
Dental Examination	X	X	X	X
Development and Behavior Assessment	X	X	X	X
Hematocrit	X			X
Urinalysis	X	X		
Urine Culture (females)	X	X		
Tuberculin	X			
DTP Vaccination	X	X	X	X
TOPV	X	X	X	X
Measles-Mumps-Rubella	X	X	X	X
Parent and Child Counseling				
Nutrition	X	X	X	
Oral Hygiene	X		X	
Smoking	X			
Accidents		X	X	X
Poisons				X

See footnotes at end of Table.

Preventive services (Cont'd)

4. School Child and Adolescent

	FIC ¹	ASPH ATPM ²	APHA ³	TF ⁴
Height and Weight	X	X	X	X
Blood Pressure	X	X		X
Vision and Hearing	X	X	X	X
Physical Examination (including skin)	X	X	X	X
Dental Examination	X	X	X	X
Development Assessment	X	X	X	X
Laboratory Examinations				
Cholesterol	X	X		
Hematocrit	X			X
Urinalysis		X		
Urine Culture (females)	X	X		
VDRL	X	X		X
Tuberculin	X			
Sickle Cell Trait	X			
Gonococcal Culture (females)	X	X		X
Immunization Boosters	X	X	X	X
Counseling				
Nutrition	X	X		
Oral Hygiene	X			
Smoking	X	X		X
Drugs	X	X	X	X
Alcohol	X	X	X	X
Sexual Development and Hygiene	X	X	X	X
Family Planning and Contraception	X	X		X
Exercise		X		
Accidents	X	X		X

5. Young Adult

History	X		X	X
Height and Weight	X	X	X	X
Blood Pressure	X	X		X
EKG	X			
Hearing and Vision				X
Physical Examination	X	X	X	X
Breast Examination (females)			X	X
Rectal Examination			X	
Pelvic Examination (females)			X	
Laboratory Examinations				
Cholesterol	X	X		X
Triglycerides	X			
Glucose/Blood Sugar	X			X
Uric Acid	X			
SGOT	X			
Hemoglobin/Hematocrit	X			X
Blood Count, complete			X	
Urinalysis	X	X	X	
VDRL			X	X
Gonococcal Culture (females)		X	X	X
Pap Smear (females)	X	X	X	X

See footnotes at end of Table.

5. Young Adult (cont.)

	FIC ¹	ASPH ATPM ²	APHA ³	TF ⁴
Chest x-ray			X	
Tetanus and Diphtheria Boosters	X			X
Counseling				
Nutrition		X	X	
Smoking	X	X	X	X
Alcohol and Drugs	X	X		X
Contraception and Family Planning			X	
Exercise		X	X	
Sleep		X		
Accidents				X

6. Middle Age Adult

History	X		X	X
Height and Weight	X	X	X	X
Blood Pressure	X	X	X	X
EKG	X	X	X	
Vision		X		X
Tonometry	X	X	X	
Spirometry			X	
Physical Examination	X	X	X	X
Breast Examination (females)		X	X	X
Rectal Examination		X	X	
Sigmoidoscopy			X	
Pelvic Examination (females)			X	
Laboratory Examinations				
Cholesterol	X	X	X	X
Triglycerides	X		X	
Glucose/Blood Sugar	X	X		X
Uric Acid	X			
SGOT	X			
Hemoglobin/Hematocrit	X			X
Blood Count, complete			X	
BUN			X	
Creatinine			X	
Urinalysis	X		X	
VDRL			X	X
Tuberculin			X	X
Gonococcal Culture (females)			X	
Pap Smear (females)	X	X	X	X
Stool Guaiac	X	X	X	X
Mammography (females)	X	X		X
Chest x-ray			X	
Tetanus and Diphtheria Boosters	X			X
Counseling				
Nutrition		X	X	
Smoking	X	X	X	X
Alcohol and Drugs	X	X		X
Contraception			X	
Exercise		X	X	
Sleep		X		
Accidents				X

See footnotes at end of Table

Preventive services (Cont'd)

7. Older Adult

	FIC ¹	ASPH ATPM ²	APHA ³	TF ⁴
History	X		X	X
Height and Weight	X	X	X	X
Blood Pressure	X	X	X	X
EKG	X	X	X	X
Vision	X	X		X
Tonometry		X	X	
Hearing	X	X		X
Spirometry			X	
Physical Examination	X	X	X	X
Breast Examination (females)	X			X
Rectal Examination	X	X	X	
Sigmoidoscopy			X	
Podiatric Examination	X			
Dental Examination	X			
Laboratory Examinations				
Cholesterol	X		X	
Triglycerides	X		X	
Glucose/Blood Sugar	X	X		X
Uric Acid	X			
SGOT	X			
Hemoglobin/Hematocrit	X			X
Blood Count, complete			X	
BUN			X	
Creatinine			X	
Urinalysis	X		X	
VDRL			X	
Tuberculin			X	
Pap Smear (females)	X	X		X
Stool Guaiac	X	X	X	X
Mammography (females)		X		X
Chest x-ray			X	
Tetanus and Diphtheria Boosters	X			X
Influenza Immunization	X			X
Counseling				
Nutrition	X	X	X	
Smoking	X		X	
Alcohol and Drugs	X	X		X
Social Habits	X			
Exercise		X	X	
Sleep		X		
Housing	X			
Retirement Plans		X		
Depression/Suicide				X
Accidents				X

¹ Preventive medical services for National Health Insurance. Report of a Fogarty International Center Task Force prepared under the auspices of the Office of the Assistant Secretary for Health, DHEW, May 1974.

² Incorporation of preventive medical services into National Health Insurance. A paper prepared for the Office of Management and Budget by Lester Breslow on behalf of the Association of Schools of Public Health and Association of Teachers of Preventive Medicine.

³ Proposed preventive benefits to be covered on a first-dollar basis under National Health Insurance. The American Public Health Association, July 16, 1974.

⁴ The preventive procedures proposed in the task force report. The task force recommended that its procedures be offered several times during pregnancy and infancy, again at school entry and adolescence, thereafter every five years during early and middle adult life and every two years during later life.

Source: Preventive medicine U.S.A.: theory, practice, and application of prevention in personal health services. Prodist. New York, 1976.

1. All listed definite preventive procedures for specific age groups, instead of calling for a vague check-up.

2. All indicated some rational periodicity, rather than an annual check-up.

3. All relied both on scientific proof and on product interpretation of all available evidence concerning potential benefits and costs.

4. All included both certain counseling procedures designed to influence favorably habits related to health (such as cigarette smoking), and certain physical procedures designed to ascertain such health risk indicators as blood pressure and blood cholesterol as a basis for preventive medical action.

5. All agreed fully on many of the specific procedures and there was substantial agreement (three out of four) on several more. A good number of the apparent discrepancies were undoubtedly due to coding problems, as for example the failure to show in the present Task Force Report counseling on nutrition for the preschool child.

It is remarkable that professional bodies expert in preventive medicine and public health have presented such similar recommendations. While there was, as might be expected from the nature of the field, some overlap of personnel involved, it is clear that the composite proposal emerging represents a very high degree of concurrence among the nation's experts in preventive medicine and public health.

Prevention should become the paramount, the organizing element in medical care with health maintenance, not cure, as the primary aim. That means a substantial reorientation of medical practice and medical education; the focus will become not treating illness, but promoting health with the participation of those being served. It will require changing the present attitude and behavior of the American people toward health care; instead of abject dependence on physicians and other elements of the care system, people will learn that the primary responsibility for health lies with themselves—particularly their habits, including how they use the health care system.

Emphasis on prevention in a national health policy should include:

1. Education both of the general public and the health professions in preventive medicine as outlined by the professional bodies in the field and summarized in this paper.

2. Development of model preventive medical services along the above lines by Federal, State and local public health agencies, and encouragement to similar ventures in the private sector.

3. Redirection of the payment system for health services so as to give highest priority to preventive services, with saving of funds in the system for this and other purposes by deliberate curtailment of present waste in the excessive hospital facilities, certain categories of specialty personnel and unneeded services.

4. Expression of goals and evaluation of achievement in terms of specific mortality and morbidity rates, measure of use of well-proved procedures such as immunizations, and extent to which good health habits are formed.

Appendix: Excerpts from the Report

A substantial portion of the gain in longevity between 1900 and 1973 was made during infancy. About half of the total gain was made during the first five years of life, and almost all the remainder during the years prior to 45. For white males at age 45, the gain in longevity—considering all advances in medical science and levels of living—was less than four years; for other males the gain was less than five years. Females gained about nine years in longevity after age 45.

The relatively small gain after age 45, especially for males, reflects two facts. One is that heart disease and cancer cause death mainly after that age, and progress against those diseases has been slow. The principal advances in preventive medicine (and health) have been against the communicable diseases in early life. The other fact is that certain forms of cancer and heart disease have actually increased substantially since 1900, especially lung cancer and coronary heart disease.

Thus, the health problem in the United States has changed remarkably since the beginning of the century. Now heart disease and cancer are the main causes of death (and considerable disability), and these deaths begin to weigh most heavily after age 45; formerly communicable diseases in early life were the outstanding problem.

This should not be taken to imply that communicable disease no longer constitute a problem in the United States. They are, in fact, still a considerable burden on the population. Nor should one assume that progress against disease in infancy has been so great that little more will occur. In fact, the rate of infant mortality in the United States remained stationary from 1955-1965 and then began to decline in the late 1960's. It is still higher in the United States than in several other countries and could in all likelihood be substantially reduced.

By the mid-twentieth century, however, the major health problem in the United States had clearly come to be the chronic diseases of middle and later life.

Lung cancer and coronary heart disease require a much different approach from that developed against typhoid fever and poliomyelitis. In the present state of knowledge, dealing preventively with chronic disease consists to a considerable extent of identifying risk factors for particular conditions, for example, cigarette smoking and high blood pressure, and minimizing such risk factors in the population. Ideally, risk factors should be avoided entirely. That is possible for many individuals who have not

acquired them. For other individuals, in whom the risk is already present, action must be taken to reduce it.

Measures for the control of the known risk factors for chronic disease may be specified by the physician but they must generally be adopted and carried out by the individuals concerned. Incorporating this approach into personal health services is one means of preventing the major conditions now adversely affecting health.

Empirical Basis for Preventive Medicine

An important means of preventing the health problems of our day, then, is to influence the daily habits of people. These health problems are now known to be caused largely by various aspects of a new style of life, including cigarette smoking and excessive consumption of alcohol and food, that prevails among many people in the United States. The means of dealing with the current major health problems, thus, will evidently be much more dependent on personal, life-long behavior than has been true of health problems in the past. It will be necessary to involve individuals themselves in controlling these diseases, at least in the face of our present understanding of the origin of the major chronic diseases.

Not only do personal habits play a large role in the causation of the major health problem of our day, and thus provide a basis for attacking the major chronic diseases, but scientific and technological achievements have provided another approach towards the prevention of disease. The technical means have been developed for surveillance of several aspects of human functioning that are related to the chronic diseases. Systematic observation of certain conditions in man permits the identification of deviations that often evolve into the abnormalities that we call diseases.

For example, higher diastolic and/or systolic blood pressure than "normal" may be a precursor of hypertension and the diseases associated with that condition. Evidence is now accumulating to indicate that finding and treating people with blood pressure at levels higher than "normal" can be beneficial. The condition may otherwise progress to permanent damage, even though the blood pressure would not in previous years have been regarded as high enough (if not associated with enlargement of the heart or other abnormalities) to justify treatment. Modern treatment may avoid continued, high blood pressure which may lead to disability and premature death in a significant proportion of the hypertensive population.

Listed below are several categories of conditions that can be systematically observed in order to detect abnormalities when they can be most effectively handled.

1. Immunologic

Susceptibility to measles, poliomyelitis, diphtheria, pertussis, tetanus,

and other infectious diseases can be ascertained by history and sometimes by other means. Artificial induction of immunity to such diseases is then indicated, with emphasis on certain time periods of life. Immunologic surveillance is now also applicable to other situations important to health, such as in Rh incompatibility between mother and fetus and in certain allergic conditions for which treatment can be effective.

2. Bacterial

Invasion of the body by bacteria and other organisms continues to be an important cause of disease, for example, tuberculosis, syphilis, gonorrhea and urinary tract infections. Techniques are available for the detection of such infections. Use of these techniques is important not only for protecting the health of the individuals infected, but often for the protection of other individuals as well. Thus, surveys indicate that asymptomatic infection with gonorrhea exists to the extent of 1-5% in various groups of young women in whom such infection would not be suspected because of symptoms. It is becoming evident that these asymptomatic infections of young women constitute not only a hazard to such women, but also an important reservoir for the continued epidemic of gonorrhea in the United States as well as elsewhere in the world.

3. Anatomical

Perhaps the most widespread health-related abnormality of anatomy in the United States is excessive weight in relation to height. For years it has been well recognized that excessive weight, at least in many population groups, carries a risk of morbidity and mortality higher than that among individuals of the same group who have a normal weight-height relationship. Lumps of a certain character in the breast also are being recognized as early cancer, through physical examination by physicians, through self-examination and by mammography. Microscopic examination of scrapings from the cervix can reveal early abnormalities called cervical dysplasia or carcinoma-in-situ; if not corrected, they may eventuate in cancer of the uterus and fatality. Dental caries and disorders are another widespread anatomical abnormality which can be frequently prevented through prophylaxis or discovered early and corrected with avoidance of future morbidity; if neglected, these lesions may result in loss of teeth or other harm. Other conditions for which routine surveillance is useful include congenital dislocation of the hip and congenital heart disease.

4. Physiological

Elevated blood pressure has already been mentioned. Excessive intraocular tension can likewise be detected, often an early evidence of the onset of the disease glaucoma, but it is not clear that loss of vision can be avoided any more completely by treatment during the stage when the condition can be discovered by screening than later when symptoms first

occur. Loss of visual or auditory acuity may indicate the need for intervention before the individual has any sense that disease is occurring. Abnormalities detected by electrocardiography are now routinely sought by many internists, particularly in susceptible individuals, with a view toward instituting measures for avoiding the effects of coronary heart disease.

5. Chemical

High blood cholesterol is generally recognized as an important risk factor in coronary heart disease. The precise value of lowering blood cholesterol as a preventive measure for that disease is being actively investigated. Likewise it is clear that diabetes can be detected in its early stages, before the onset of symptoms, through measurement of blood glucose; treatment of the condition by dietary means (and avoiding the use of drugs) can be helpful. Measurement of hemoglobin or hematocrit is performed in many circumstances for the purpose of initiating any indicated treatment to maintain normal hemoglobin level and thus facilitate the maintenance of health. Increased urinary protein and sugar are other examples of abnormalities that can be detected readily in a chemical approach to health maintenance.

6. Behavioral

Cigarette smoking in the United States and in many other countries is clearly a habit with profoundly adverse effect on health. Excessive use arising from complex motivation can lead to severe degrees of ill health and early mortality. Besides the adverse effect of using cigarettes, alcohol, and other substances with harmful effects, states of anxiety, depression, and other emotional disorders that are evident in behavior likewise may portend harm to health.

Inspection of the above list, and it could be considerably more detailed, suggests that routine surveillance of various parameters of human function may be useful in detecting abnormalities before they are ordinarily recognized and when intervention may be most effective. Additional items or refinements of existing ones, are being proposed for incorporation into the outline given above. For example, investigators are now actively exploring other chemical measures as signals of incipient disease and the precise levels of blood pressure that merit active treatment.

These and dozens of other procedures for detecting abnormal conditions must still be further evaluated to determine the extent of their usefulness, particularly the value of intervention after finding the abnormality. Still, enough is known about the periodic monitoring of such factors and about the value of correcting many abnormalities, that the technical foundation for approaching preventive medicine through routine surveillance may be regarded as established. For example, the American Heart Association has prepared a handbook that estimates the

probability of developing atherothrombotic brain infarction in eight years based on several risk factors (age, sex, elevated blood pressure, ECG abnormalities, glucose intolerance, high levels of serum cholesterol, and cigarette smoking habit). The handbook can thus be used as a guide in the selection of stroke candidates for preventive management. It is stated that preventive measures available for modification of major stroke precursors include antihypertension agents, antiarrhythmic drugs, anticoagulants, and carotid artery surgery; and that the use of these correction measures appears reasonable in high risk stroke candidates even through the proof of efficacy has not been established for all.

Knowledge has advanced to the point that it is possible to list many specific procedures that should be carried out at particular times of life to protect health. On the other hand, many of the procedures proposed are as yet in various stages of being tested, or further developed, with a view towards routine application in personal health services if definite benefits can be proved.

It is important to emphasize that this approach to preventive medicine at the present time serves only to alert the physician to the possibility of damage to health that may be occurring. Some abnormality can be discovered in just about everyone, and it is obviously unwise to turn everyone into a "patient." Further, it is important to avoid the possible adverse effects of the screening procedures themselves, for example, the use of radiation in mammography. Finally, it must be recognized that there are large areas potentially important for preventive medicine where our knowledge is grossly inadequate. The present state of medical science can do little to relieve the burden of much chronic illness, for example, in the mental health field and in rheumatic disease.

Technical achievements, however, continue to bring promise of providing insight into the natural history of disease, especially pinpointing where disease may be most vulnerable to preventive measures. Thus the electron-microscope has provided the capability of detecting changes at the cellular level, and biochemistry has yielded techniques for measuring enzyme levels, that may be useful in preventive medicine. Emphasis should be placed on using such developments in basic science to explore cellular and enzymatic changes that may be precursors of disease, detectable at a time when intervention could be most effective. In this connection, it should be noted that the rate of change in the individual is important as well as the existence of abnormal conditions.

Theoretical Basis for Preventive Medicine

The future advance of preventive medicine may lie substantially in linking basic science more directly with epidemiology. The clinician will serve as the intervening interpreter of the disease significance of what is disclosed through basic science research, and help to judge the effectiveness of intervention in situations that cannot yet be regarded as disease. The basic scientist in immunology, physiology, anatomy and

other fields may, however, now profitably join the epidemiologist in elucidating the mechanisms and early stages of disease than can lead to preventive measures.

Important as is this approach to preventive medicine, it must be emphasized that the science of epidemiology has made significant contributions to understanding of disease even in the absence of insight into disease mechanisms. This has been true from the time that James Lind discovered the cause of scurvy to be the absence of citrus fruit or other sources of vitamin C as later noted; through the time when John Snow discovered the cause of cholera to be polluted water, prior to the establishment of the idea of bacterial cause of disease; down to the discovery that cigarette smoking causes lung cancer, without understanding exactly how this happens.

Personal health care has been and still is essentially a complaint-response system. The patient brings his complaint to a physician who responds by making a diagnosis and prescribing or carrying out therapy. The purpose is to resolve the patient's complaint. The complaint-response system generally works quite well for the patient who has a severe pain in the abdomen or other serious symptoms. It is, however, increasingly recognized as insufficient for complete health care whose intent is to avoid premature death and unnecessary disability. Complaints need an appropriate response, but the presentation and handling of them can be more effective as part of a larger health-maintenance system of care.

An orientation towards restoring, maintaining, and protecting optimal function is a fundamental aspect of the preventive approach in personal health care. Thus, responding to an episode of cardiac decompensation by brief hospitalization of the patient and discharge with a prescription is not sufficient. In order really to protect optimal functioning, it will often be necessary to provide continuing care. For example, a public health nurse or other health worker may visit the patient's home after discharge with congestive heart failure to assist the patient in following the regime prescribed, rather than simply waiting for another episode of decompensation to occur and bringing the patient back to the hospital. Continuing and comprehensive care of such patients is necessary for best results. While seemingly close to what most physicians do in their care of patients with chronic illness, the difference in emphasis and point of view is extremely important.

On the one hand the physician waits for the presentation of complaints and responds with an episode of care, either in the office, clinic or hospital. From then on, the responsibility is totally that of the patient. The physician and the health care delivery system simply await further developments.

The preventive orientation, on the other hand, is to continue the care wherever and however it might be needed so as to preserve, maintain and protect optimal function.

The incorporation of preventive medicine into personal health services may be regarded as deliberately and regularly adding primary and secondary preventive procedures to a system of comprehensive, continuing health care of all persons in the population. It will obviously entail a change in orientation and a change in the organization of personal health care services.

Dynamic Nature of Preventive Medicine

Effectively revising the personal health service delivery system to incorporate preventive medical services more systematically requires that attention be given to the dynamic nature of preventive medicine itself. Provision should be made for adding new procedures as they are developed, evaluated and judged ready for general application. For example, care during pregnancy is designed not only to protect the health of the woman but also to assure the birth of a healthy infant. A new technique, amniocentesis, has been developed as a means of detecting Down's syndrome (a common cause of mental retardation) and other conditions likely to result in a deformed fetus. Within a relatively short time routine application of amniocentesis in pregnancy, especially among older women, may be recognized as desirable. Some would say the time has already arrived. Whenever a preventive technique has been found useful, it should be made available generally in the health services delivery system.

The incorporation of amniocentesis into the health services delivery system, however, should be arranged with a view not only to its present application in Down's syndrome, and a few other conditions, but also with a view toward its possible expansion for the detection of additional conditions that may result in a deformed or dead fetus. The current rapid advances in medical science, including those in genetics, make it likely that preventive medicine using such techniques as amniocentesis will move ahead rapidly in coming years.

The recent history of preventive medicine indicates that it often takes 5-25 years for a technique once developed to be widely applied in health care. The personal health services delivery system must become more responsive to innovations in preventive medicine. Lag between development and general use should be reduced by more prompt and systematic evaluation of new procedures—followed, if they are found meritorious, by rapid incorporation into routine care. Only then will the potential of preventive medicine be fully realized.

Once a framework for providing preventive medical services is established, it should be carefully watched to assure that new advances are promptly incorporated, unnecessary or harmful procedures weeded out, and adjustment made in the system of preventive medicine itself whenever it is found wanting.

Probably the most difficult aspect of properly incorporating preventive medicine into personal health services is the determination of precisely

what conditions are to be prevented, by what procedures, by what means and at what cost. Objectives should be explicitly stated. Expectations must be made clear, not only to those involved in health services administration and in health care professional work, but also to the general public. This should be done, condition by condition, and procedure by procedure, to the maximum extent possible. It is essential to minimize the hazard of false hope, as well as to minimize unnecessary delay in the application of procedures that have been found to yield benefits.

ABSTRACT: Coordinated policies among reimbursing, health planning, certificate-of-need, utilization review and quality monitoring organizations are essential if the goals of Section 1502 of the Health Planning Act are to be realized. An information bridge between health planning bodies and hospital rate-setting programs offers one approach. Criteria are presented for uniform hospital cost reporting, systems design, and auditing and a proposal is made for the creation of a uniform hospital cost data set.

"Sec. 1502. The Congress finds that the following deserve priority consideration in the formulation of national health planning goals and in the development and operation of Federal, State, and area health planning and resources development programs: . . . (9) The adoption of uniform cost accounting, simplified reimbursement, and utilization reporting systems and improved management procedures for health service institutions . . ."

Section 1502 (9)

Hospital Rate Setting - A Potential Information Resource For Health Planning

*Katherine G. Baur**

Nine State governments and at least 24 Blue Cross plans have introduced some form of hospital rate review or rate setting since the early 1970's in attempts to contain the seemingly inexorable rise in the cost of hospital care. These systems of prospective reimbursement place advance limits on hospital expenditures and are in contrast to the prevailing mode of retrospective cost reimbursement. By adopting such systems, their sponsors hope to curb unwarranted spending without sacrificing patients' access to needed services or the quality of these services.

It appears quite likely that any national health insurance law or major restructuring of Medicare and Medicaid will bring prospective reimbursement to all of the Nation's approximately 7,000 hospitals. This circumstance presents an unusual opportunity for health planning agencies to capitalize on the data collection and analyses which rate setting bodies require if they are to accomplish their objectives.

As this paper will show, rate setting programs must assemble and use a very wide range of information. They need detailed data on hospital revenues, expenditures and volumes of service. An earlier paper in this collection has stressed how urgently planning and certificate-of-need bodies need access to such information.¹ And second, if sensitive rate setting decisions are to be made, each hospital's costs must be related to data that show the types of services it offers and its patterns of utilization, the mix of its patients, the free services it renders, its plans for growth or replacement, its educational and training programs, and a host of other variables. Furthermore, rate setters require that such data be reported annually. All of this is of great interest to planners and in some States, notably Washington and Massachusetts, planners are already exploiting this mine of information.

For their part, rate setting programs will look to planning agencies for certain information they need, such as the delineation of hospital areas, descriptors of alternative health care systems within their areas, and the population denominators they require for special studies of State and regional hospital and health care expenditures related to utilization. Financial feasibility studies which planning agencies require before granting certificates of need can be used later on by rate setting

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1. See in particular, Holloway et al., pp 93-101.

programs in establishing rates for the new services. Already, many programs are using this data.

The sharing of commonly needed information that rate setters and planners routinely produce can promote significant economies. Just as important, perhaps, regular information interchange can also encourage habits of regular communication between those who make decisions on certificates of need and those who later decide on rates of reimbursements for their services. If this communication takes place within the framework articulated in Federal guidelines and State and Health Services plans, reimbursement decisions can reinforce the planning programs and further many of the goals enunciated in Section 1502.

While such information exchange holds great promise, it will not happen without concerted efforts by all parties to the venture, as witness the universal failure of past reimbursement systems to yield useable cost and cost-related data to planning agencies. To achieve this requires appreciation of both the benefits to be gained and the difficulties to be overcome. This paper attempts to provide a general background on information for hospital rate setting in the hope of increasing general understanding of the issues. It first reviews relevant provisions of the planning law and then the spectrum of information required for rate setting, its sources, and its potential uses by planning bodies. Moves to improve the quality and comparability of hospital costs data through uniform accounting and reporting are then described. Finally, means are proposed to provide regular access to hospital cost reports by planners.

The paper derives in large part from a recent report on the integration of information for hospital rate setting, sponsored by the Office of Research and Statistics of the Social Security Administration and carried on by the Harvard Center for Community Health and Medical Care.² The project analyzed the information used (or planned for use) in major Statewide prospective rate review programs throughout the United States and in one Canadian province. Organizational aspects of information systems and of information sharing between planners and rate setters were examined in case studies, and criteria to govern the development of uniform reporting of hospital costs were drafted and discussed at a two-day conference. This paper includes some of the project's major recommendations, designed to inform the drafting of national guidelines.

I. Provision of the Planning Law Affecting Hospital Rate Setting and Planning Interactions

Since the Congressional sponsors of the 1974 planning act were in large part spurred to action by the need to exercise restraints on spiraling costs and to secure better value from the Nation's more than \$100 billion in health expenditures, they incorporated several provisions that implied connections between planning and future hospital rate setting. Further,

2. Bauer, Katherine G.: Improving the information for hospital rate setting. Final report, DHEW Contract 600-75-0142. Office of Research and Statistics, Social Security Administration, Washington, D.C., September 30, 1976.

recognizing that reliable information is essential if rate setting is to help constrain costs and contribute to a more rational distribution of health services, they enacted Section 1533(d) to require the Secretary of Health, Education, and Welfare to develop a more orderly infrastructure for the accounting and reporting of costs for health care institutions. Finally, Section 1502 (9) adjures health planning agencies to give priority attention to promoting "uniform cost accounting, simplified reimbursement, and utilization reporting systems and improved management procedures for health service institutions." Because planning agencies themselves could not be expected to perform the prime development functions in these respects, there seemed to be a clear intent to encourage maximum cooperation between planners and the organizations to be involved in newly emerging forms of reimbursement. Thus, the Secretary of Health, Education, and Welfare vested responsibility for implementing sections 1526 and 1533(d) in the Social Security Administration.

II. The Nature of the Rate Reviewers' Problem and the Spectrum of Information Required

The various rate review and rate setting programs in current operation vary considerably. They are characterized by different types of sponsorship, payer rates affected, organization, and methods of establishing rates and hearing appeals.³ Nevertheless, in the final analysis, all are confronted with the delicate and demanding task of making operational decisions on which projected costs of individual hospitals are reasonable and which are in excess, within the context of the competing goals of promoting cost containment, maintaining patient access and safeguarding the quality of care. Successful accomplishment of the objectives of cost containment and equity to patients and providers would appear to demand:

1. Identification of likely sources of significant excess costs before the rate setting process is developed, so that review efforts can concentrate on areas of high potential savings;
2. Identification of performance standards by which to determine whether a hospital's spending is reasonable in relation to the scope, intensity and quality of the service it renders appropriate to its patients' needs; and
3. Identification, collection, analysis and proper use of reliable information with which to distinguish between justifiable and unjustifiable costs, according to the above criteria.

Unfortunately, none of the existing State and Blue Cross rate setting programs can as yet claim to have more than partially met any one of these conditions. Most of the programs were established hastily, in response to some local fiscal crisis; pressures to put the new program in place within an unrealistic time frame allowed them insufficient time to pinpoint likely sources of significant excess costs and gather information

3. Cf. Prospective reimbursement: A special section. *Inquiry* 13:3 274-320, September 1976.

accordingly.⁴ Their directives in enabling laws and contracts are broad, usually phrased in vague terms, such as to set rates that are "reasonably related to the efficient production of services of good quality."

Given the special nature of the hospital industry, performance standards by which to determine "efficiency" are not easily devised. The Nation's hospitals are extraordinarily diverse, ranging from rural cottage hospitals to multifunction medical centers. They care for patients with illnesses of different degrees of severity and complexity, bring to bear on their behalf different degrees of sophistication of manpower, services and equipment, and deploy these resources with different degrees of skill and efficacy. Different hospitals must also pay different wages and prices for identical kinds of goods and services according to geographic location, union status, and a host of other variables.

Rate setters, in short, must obtain and know how to use a very broad range of detailed information describing not only what an individual hospital spends, but what it does and how well it does it. In addition, they need information to allow them to account fairly for many other factors that directly impact hospitals' financial requirements, e.g., bad debts and free care, State and Federal licensing and accreditation requirements, teaching programs, donated funds and services, etc.

Finally, if rate setting is considered as part of a wider regulatory effort to bring about a more rational distribution of health services to the populations of given regions, the rate reviewer needs to interdigitate his information and decision-making with that of PSROs and planning agencies.

In the absence of appropriate information of good quality, several patently undesirable consequences are predictable:

- The rate setting process will either be arbitrary, or be inordinately complex and expensive, in either case opening the administering agency to justifiable criticism from providers and the public, expressed in appeals, litigation and political actions.

- Some hospitals will be overpaid for the care they give; others will be underpaid.

- The potential of rate setting to improve the cost effectiveness of health care delivery will be lost. Worse, in efforts to simplify the process, rate setters may come to rely on some grossly inadequate hospital performance measures just because the data to construct them are easily available. Such action could serve to freeze in or exacerbate the inadequacies of present fragmented approaches to delivering health services. This, in turn, would prevent the cost savings possible from increased overall system efficiency.

Unfortunately, the information presently available to inform hospital rate setting decisions and to monitor the results of rate setting programs more often than not fails to meet the criteria of appropriateness, quality

4. Lack of specific cost containment objectives also reflects the general inability of rate setting programs to reconcile the variety of different overall purposes that Governors, State Legislators, hospitals, third-party payers and other organizations usually expect them to serve. Often these are in direct conflict, e.g., fair share payment by all payers versus savings to governmental payers.

and timely access. Although masses of data are collected from hospitals by rate setting bodies, third party payers, and other organizations, often they are not the kinds that are actually needed, are not comparable among hospitals, or are not disclosed. This can be illustrated by reviewing the changing perceptions of information needed to carry out the rate setting task.

Changing Perceptions of the Information Needed

The first generation of rate setting programs used the same kind of financial and service volume data that hospitals had been accustomed to report as the basis for their former cost-based reimbursement. The major change was the requirement (except in New York) that hospitals submit standard budget schedules along with their standard reports on historical costs.

Each rate setting program designs its own package of annual cost/budget forms and schedules. These range in length from 35 to 182 pages. However, they all derive generically from the 40-page annual report that the Medicare program requires from each of its 6,800 participating hospitals as the basis for final settlement of its reimbursement. But the Medicare cost report was never intended to provide a basis for comparison of the performance of different participating hospitals. It enabled the new rate setting programs to accumulate large volumes of data on hospital expenditures, revenues and volumes of service from each hospital with relative ease, but did not provide data which was necessarily suited to the new objectives of setting rates in accord with the efficient production of services of good quality.

As new programs were instituted, more attention was paid to broadening information requirements. Most older programs have also been sharpening their cost containment goals and experimenting with new methods to identify and control out-of-line or unnecessary costs, and they are now calling for the collection and use of many new kinds of data and fundamental changes in the way their basic cost and budget data are reported.

Far more attention, for example, is now being paid to the cost impact of hospital building programs and new high technology medical programs than in the early 1970's when most of the rate setting programs were organized. Many programs are requiring hospitals to submit long-term program and capital facility plans and budgets. Concern with excess costs stemming from redundant facilities and services is also growing, bringing a natural conjoining of interests with planning and certificate-of-need agencies. Certificate-of-need reviewers are beginning to request technical assistance from rate analysts in reviewing the financial feasibility and/or projecting the operating cost impact of hospital expansion proposals.

However, the major efforts of rate setting are still focused on the search for measures of hospital efficiency. Up to now, the prime effort has been directed toward detecting inappropriate hospital input costs per lab test, etc. This requires ever greater levels of detail on labor and supply

expenditures, with direct expenses matched to services by cost center.

Because review of each individual hospital's expenditures and revenues in relation to its performance is time consuming, rate setting programs that cover large numbers of hospitals usually seek to shortcut the process by grouping hospitals of similar characteristics and performing various kinds of comparative analyses. Averaging costs among grouped hospitals yield surrogate norms for what is presumed to constitute efficient practice. The validity of any such analyses, and thus the credibility of the method, depends on the homogeneity of the hospitals selected for the comparison groups and the comparability of the data reported by the hospitals within the groups. Hospitals in many States challenge the method on one or both of these grounds, both in appeals and court actions. It is generally recognized that more refined and better quality data are required to overcome present deficiencies.

Most classification schemes, for example, fail to take account of differences in patient mix and in quality of care. Several rate setting programs are now beginning to address the difficult issues surrounding better definition of these and other aspects of hospital output, recognizing the inadequacies of traditional measures such as "patient day," "test," "visit," etc. This interest is manifested in a new search for cost data that will reflect the degree of complexity of resources that hospitals employ, matched to the degree of complexity of patients' needs. A few programs are now beginning to seek full descriptions of hospitals' special services, specialist manpower and data on patient diagnoses and principal procedures, and to explore the relationships of costs to service intensity according to patients' medical care needs. To obtain data about hospital patients, they must go beyond their own reporting packages and seek reports from uniform hospital discharge abstract systems or claim forms. Beginning in 1977, several programs will be obtaining regular reports from abstract systems. However, problems of disclosure often hamper access to such reports.

Many programs are experimenting with relative value scales to account for differences in the complexity of laboratory and radiologic procedures. Some are also trying to develop more sensitive statistical bases for allocating indirect costs.

In addition to requiring information that permits more homogeneous groupings of hospitals and better definitions of hospital product, rate setters recognize that data from hospitals must be reported completely, accurately and in accord with commonly defined elements and categories if useful comparisons are to be made. Problems in the present quality of the data and moves for improving it will be considered in a later section.

To complete the spectrum of data now employed by rate setting programs, summarized in Exhibit A, most rate setting programs have used Federal and State government reports on wage and price movements to project inflationary increases in hospital input costs. As with hospital classification schemes, programs vary considerably in the sophistication of the methodologies they employ.

Exhibit A: Sources of information most frequently used as planned for use by five State and regional programs.

Data Sources	Types of Data or Analyses
Hospitals:	
—annual cost/budget reports to rate body	—financial statements —cost/revenues —volumes of service utilization and input statistics —operating budget —capital budget —bed complements, by service —special services, patient care and ancillary —education programs —physician staff characteristics —special items for use in constructing hospital groups, economic indicators
—certificate of need applications	—financial feasibility, cost estimates, etc.
—special surveys	—hospital service area
Federal and State Agencies:	
—U.S. Government statistical series	—population characteristics —movements of wages and prices
—State government agency reports	—population characteristics —movements of wages and prices
—planning agencies	—population and population-related resource data
—certificate of need agencies	—supporting data submitted to justify community need for facility and service changes
—licensing agencies, JCAH, AMA	—licensing and accreditation status
Miscellaneous Special Sources:	
—surveys and reports from private sector	—construction costs, special supply and maintenance costs, etc.
—special studies	—other detailed data <i>ad hoc</i>

Note: Not all these information types are used in every program. Quality (process) measures such as JCAH accreditation are used minimally.

Source: Project working papers on information systems in Arizona, Maryland, Massachusetts, New York and Washington. Center for Community Health and Medical Care, Harvard University School of Public Health and Medical School, in press.

Up to now, rate setting bodies have studiously avoided any confrontation with physicians that would result from concern with excess hospital

costs that may stem from unnecessary admissions, excessive lengths of stay or other manifestations of poor patient management. Although some programs are trying to establish relationships with PSROs, no mechanisms for regular information exchange have yet been developed.

Information for a National Program

The types of information now being used for State and regional hospital rate setting will profoundly influence the nature of any future information base for a national rate setting program. However, it would be unfortunate if present practices, which are still very much in flux, should become frozen into a pattern that might constrict future development.

If hospital rate setting, like planning, is to become part of a broad armamentarium of regulation with which to implement broad health policies for the Nation, ideally, those who set hospital rates and those who monitor the results of rate setting programs should be able to relate hospital cost information to the medical needs and demographic characteristics of both the population and of the patients served; to the nature, volume and timeliness of the services provided; to the efficiency of the service delivered; to the quality of the product; and ultimately to the consequences to patients and community in terms of total expenditures, health, and well-being. This calls for relating many different types of data derived from disparate sources.

As we move towards a framework that demands better allocation of resources for health within some limits on total expenditures, the public will presumably expect the rate setting and reimbursement mechanisms to be accountable for ensuring that the best value is obtained for the health dollar spent. Certainly the rate structure should not inadvertently encourage unwarranted hospital admissions, unnecessary medical procedures or excessive lengths of stay. Nor should hospital rates subsidize duplications in the community's acute care health facilities and programs beyond what its population actually requires. Conversely, the rate structure may be expected to provide incentives to create new lower-cost components of the system, such as ambulatory and home care services if these are what patients need. Finally, it is essential that rate setting take quality and outcome measure into account to the extent that they exist and as they become further developed.

With these considerations in mind, our report on hospital rate setting information submitted to the Social Security Administration recommended that:

1. The information systems and guidelines the Federal government issues in regard to DHEW and State data collection and use . . . should be designed in the light of emerging coordinated health policy objectives for improving resource allocations for health. They should not be confined to the narrow objectives of hospital price and revenue control.
2. Those who set rates and those who monitor the effects of rate setting should be able to relate accurate and reliable data on individual or aggregated hospital dollar costs to:

—Scope of service the hospital(s) offer, including service complexity and physician specialist mix;

—The burden of illness brought to the hospital(s) for care, e.g., diagnostic casemix, case complexity, patient age, income characteristics;

—The nature, volumes and timeliness of services rendered;

—Prices the hospital(s) must pay for necessary labor and non-labor inputs;

—The efficiency of the service delivery in terms of flexible staffing in relation to volume changes, internal management controls, etc.;

—The appropriateness of the patient care rendered in relation to patient needs and population needs;

—The quality of care rendered;

—Duplications in facilities and services (especially high technology services) in hospital service areas or regions, and gaps in access;

—The trends in per capita utilization and per capita expenditures for hospital services in the region, and their relation to total health care utilization and expenditures;

—The outcomes to patients and populations in terms of health and well-being.

3. The particular data elements to be collected and analyzed should be selected in the light of specified cost containment and equity objectives. However, because the nature of the information perceived to be required for hospital rate setting and monitoring is changing rapidly, and is likely to continue to change in the future, the system should be designed to accommodate to such changes in a flexible manner.

We also recommended that:

—In order to monitor the overall effects of rate setting and related regulatory programs over time and in different parts of the Nation, a specially constructed uniform hospital cost data set (UHCDS) should be abstracted from whatever annual cost/budget package is used for rate setting. When processed, it should be linked to patient data, hospital resource, and utilization files, and analyzed both in reference to populations of State and substate areas and in reference to populations enrolled in national health insurance programs.

—Such analyses are essential to monitor progress towards goals of better cost effectiveness in the health care system, since they will show trends in national, State and local area expenditures related to utilization and resource use. As they are developed, relationships of these factors to indicators of health status and patient outcomes should also be analyzed.

—The American Hospital Association's National Hospital Panel Survey already provides a means to monitor changes within the hospital industry itself.

In summary, although data on hospital costs and revenues are the starting point for rate setting, they must be supplemented by many other types of data—some collected by the rate setting program itself, some

from a variety of other sources. In particular, if goals of system effectiveness are to be pursued, hospital rate setters will need to go beyond their own cost/budgets reports from hospitals to seek information from:

- Hospital discharge abstracts and billing forms, to show the mix of patients cared for, (case complexity, diagnosis, major procedures performed by patient age and sex, etc.);
- Utilization review and medical audit summaries to show appropriateness of patient admissions, and patient management;⁵
- Reports of licensing and accrediting agencies to show process measures of quality;
- Government economic reports to delineate factors in the environment affecting labor and non-labor prices;
- Planning agencies' demographic analyses and projections, and reports on non-institutional health services, and health status of populations.

Congruence with Planners' Information Needs

It is apparent from the above listing that health planners and hospital rate setters need to draw on many of the same secondary sources of data, in particular reports from hospital discharge abstract systems, utilization review and licensing and accrediting agencies. To the extent that their efforts at access and their analytic reports can be jointly planned, pressures to obtain good information are more likely to be successful and costs will be minimized. In addition, as the performance of hospital rate setting programs become monitored in the context of expenditures and utilization trends in their constituent populations, rather than solely in terms of hospital unit price trends, planning agencies will probably be looked to increasingly to provide the necessary denominator statistics.

We turn now to the types of information that planners might usefully draw from the cost and budget packages that hospitals would submit to rate setters under national rate setting.

Since each hospital's reimbursement would be directly tied to the data they supply annually on their cost/budget reports, such reports could be an excellent source for current descriptions of each institution's ownership and control status, bed complements by type of service, types of medical programs offered, extent of free care given, proportions of Medicare, Medicaid and Blue Cross patients served, rosters of physicians according to specialty and board certification status, education programs, etc.

The capital budgets that rate setting agencies would undoubtedly require could become a particularly valuable resource for planners. HSAs that are privy to the institutional goals of all hospitals in a region at the earliest stages of proposals to implement them should be in a strong position to take an active role in seeking to influence the subsequent development of such plans in line with community priorities. It is easier to

5. The difficult issues surrounding access to such reports are fully appreciated. Discussion is beyond the scope of this paper.

nip in the bud proposals that would result in expensive service redundancies than it is to deny full blown certificate-of-need applications.

Information on hospital operating costs, capital assets and endowments constitute another unique potential contribution of hospital rate setting to health planning. Access to such information, provided that health planners can learn to analyze and interpret it properly, can add a sorely needed dimension to certificate-of-need determinations and facility and program planning. Instead of being forced to consider each application and proposal for change in isolation, reviewers and regulators would be able to construct a composite picture of the industry of their area and thus be able to arrive at decisions within this broader system context.

Disclosure of such data is not likely to prove a problem. The laws in eight States with rate setting or rate review programs specify full public access to the data collected for their implementation. Rather, up to now, the problems of access have arisen from: (a) the voluminous nature of the reports and the lack of routine abstraction and processing of key data items; (b) absence of routine analytic reports; and (c) lack of established channels of communication between rate setters and planners. In fact, the demand for information from rate setting agencies has only recently started to be felt.

Before considering means to improve this situation, however, we will turn to the question of measures to improve the quality of the basic data that rate setting programs collect on their hospital cost/budget reports. This touches upon the obligation of health planners under Section 1502 (9), to consider of primary concern "the adoption of uniform cost accounting, simplified reimbursement and utilization reporting systems and improved management procedures for health service institutions."

III. More Reliable Data Through Uniform Accounting, Reporting and Auditing

As we have seen, rate setting looks to comparative analysis of hospital performance as a basis for establishing rates. If the data from each of the hospitals being examined are not truly comparable, the exercise is meaningless or dangerous, since decisions based on unreliable data are likely to be reflected in overpayment to some hospitals and underpayment to others. Existing rate setting programs vary considerably in the extent to which their reports yield data that meet standards of comparability, completeness and accuracy.

Present Weaknesses in the Quality of the Data

Researchers and analysts who work with both the Medicare cost reports and the cost/budget reports submitted for rate setting find that hospitals usually report the dollars they spend and receive completely and well but they report the other half of the cost equation—their input and output statistics—quite unevenly. This detracts seriously from the reliability of the reports.

Inconsistencies of definition are one major source of unreliability. For example, unless the instructions that accompany the forms are highly specific, reasonable people can and do differ in their interpretations of what may constitute "major" versus "minor" equipment, "short-term" versus "long-term" loans, etc. The completeness and accuracy with which particular measures of activity are reported also leave much to be desired. Even the basic denominator of most inpatient cost comparisons, a hospital's bed complement, is not always reported consistently.

The most pervasive obstacle to valid interhospital comparisons, however, is that hospitals, for their own internal control purposes, must categorize their accounts in ways to ensure that their department heads may be held accountable for the spending decisions they make. Since hospitals vary greatly in their organizational structures and operating policies and practices, as well as in their scope of services, their internal information systems necessarily reflect these differences. One hospital, for example, may maintain a separately organized blood bank. In another, blood bank activities may be assigned to the department responsible for laboratory operations. If rate setters are to make valid cost comparisons, differences such as these must be reconciled through accounts that report on common functional cost centers to which commonly agreed-upon activities are always assigned. The problem becomes how to meet the information needs both of internal hospital managers for responsibility reporting and those of external reviewers for functional reporting.

The American Hospital Association explains the difference between responsibility reporting and functional reporting as follows:⁶

"Functional reporting can be defined as the reporting of financial information according to type of activity. Responsibility reporting can be defined as the reporting of financial information according to organizational unit.

"Total costs and revenues are the same regardless of whether functional or responsibility reporting is used. Each reporting system serves a different purpose, however. Responsibility reporting is necessary for evaluations of and by hospital management. However, because organizational structures vary among hospitals, responsibility reporting does not enable the comparisons necessary for external uses. Stated another way, although specific functional activities are similar in all hospitals, responsibility for the activities varies among hospitals depending on each hospital's organizational structure. This means that the use of responsibility reporting is limited to internal reporting and that only functional reporting can be used for external reporting."

In short, requiring hospitals to report on standard forms is only a first step. Sophisticated uniform accounting and reporting systems must provide a common language and a common means of communication; auditing must ensure that the staff in hospitals who record and report the data understand and abide by the prescribed conventions and furnish correct figures.

⁶ Chart of accounts for hospitals. American Hospital Association, Chicago, 1976.

A National System of Uniform Hospital Accounting and Reporting

The Congressional mandate expressed in section 1533 (d) of the planning law requires that the Secretary of Health, Education, and Welfare develop uniform accounting and reporting systems for health service institutions. Although it does not require that such systems be adopted, one may assume that they will be prescribed if a national rate setting program is established. The question will then become which system, and whether different systems will be allowed in different parts of the Nation.

Almost all State and Blue Cross rate setting programs encourage hospitals to organize their data according to some standard chart of accounts for reporting purposes, and they design their cost/budget forms and schedules accordingly.⁷ For the most part they employ some past edition of the American Hospital Association's chart which has been developed over a period of 16 years for the purpose of encouraging hospitals to construct and maintain internal management controls. The accounts were thus always organized to support responsibility reporting. Recognizing the needs of the new review and regulatory agencies, however, the 1976 edition of the AHA chart is linked to a newly developed uniform reporting system designed with functional accounts to meet the needs of external reviewers.

However, because this resource was not available earlier, several States that had already instituted rate review, rate setting or hospital cost disclosure programs had already adopted their own uniform chart of accounts and linked uniform reporting systems based on a model developed by the California Hospital Association in 1973. These systems are now in place in all hospitals throughout Washington and California and one is now being implemented in Arizona. A total of approximately 800 hospitals are involved.

Finally, in compliance with the planning law mandate, the Social Security Administration has developed yet a third uniform chart of accounts, to be published in the Federal Register in March 1977. Work is in progress on a linked uniform reporting system. Thus, there is now an embarrassment of riches to choose from in the effort to move towards better comparability of hospital data.

Under its contract with the Office of Research and Statistics, the Harvard Center was asked to develop criteria for the design, implementation and audit of a national system of uniform cost reporting. These may be helpful in guiding choice of system; they are presented below:

Criteria for Uniform Reporting

1. All hospitals should keep their books according to the same chart of accounts and a uniform reporting system should be designed in conformity with this chart. Uniform reporting is meaningless without uniform accounting.

7. A chart of accounts is a listing of account titles with numerical symbols, designed for compiling financing data.

In order to promote the comparability of the reported data the classification scheme and the coding system must be standard for all hospitals; definitions of functional activity centers, natural expense items and units of measure must be standard for all hospitals; all transactions must be reported according to standard conventions, and should be recorded as close to the time they are made as possible.

2. The accounting and reporting system should be designed to be useful both to hospital managers for internal control and to external bodies for comparative reviews.

An ample coding system is needed. The hospital's records should identify transactions so that they can be reported on the basis of responsibility (for internal management); function (for interhospital comparisons by activity); and natural expense categories of salaries and supply items (for internal and external comparisons).

3. Definitions of data items already standardized in existing reporting systems should be employed. Where conflicts exist, definitions in the minimum data sets prescribed by the Secretary of Health, Education and Welfare should prevail.

4. Data should be reported in a modular format that permits hierarchical aggregation for special purpose reports.

Multiple users of the reports will have widely differing needs for level of detail about hospital statistics and costs. The reporting system should be ordered so that different levels of information can be produced in reports tailored to their particular needs. These should supplement each other, not duplicate. This calls for basic forms supplemented by special schedules and requires plentiful codings on the original report documents.

5. The data should be cost effective.

It is counterproductive to spend dollars in data collection and processing to save pennies in hospital rate reviews. Similarly, it is counterproductive to forgo dollars of possible savings because of a failure to provide the level of budget needed to design, test and carefully implement a good information system.

6. Hospital reports should include all internal data items needed to implement the particular rate setting and reimbursement program in effect.

If hospital grouping is employed, the reports should include all internal items required to assign the individual hospital to its appropriate group and to monitor the continued appropriateness of this placement over time; and if an economic projection index is used, the internal data items in the reports should also conform precisely to any items selected for the construction of the index.

7. Revenues and expenses should be reported juxtaposed in each functional center.

Matching revenues with expense in each activity center reveals the extent and nature of cross-subsidization and also the share of hospital financial requirements met by various classes of payers.

Design of New Systems

1. A new uniform accounting and uniform reporting system should be developed with the guidance of a suitably staffed technical advisory committee which brings together the expertise of the major users and contributors of the data. This group should be independent of any parallel committee concerned with rate-setting policy determination.

Examples of organizational membership include rate setting programs, third party payers, hospital associations, and the Hospital Financial Management Association.

The acceptability, timeliness and reliability of the reporting system will be increased to the extent that hospital representatives in particular have opportunities to provide input into detailed design and formatting, since hospital personnel must supply the data.

While recognizing the skills that can be brought to bear through contracts with accounting firms to design new systems, the needs of rate setters, hospitals and other users must be kept paramount. Final decision-making authority must rest with the rate setting body.

2. The adoption of any new chart of accounts or reporting system should be approached in an experimental mode, building on evaluation and feedback.

Specifically, before adopting any new form it should be reviewed by major users and providers of the data and pilot tested with a carefully drawn sample of hospitals and revised according to the results.

Implementation

Recommendations were also made to guide implementation of the new systems, based on experience reported by the hospitals and hospital commissions in California and Washington that had already undergone the trauma of transition. Many kinds of organizational, technical and communication problems were encountered.

First, since most hospitals formerly used the AHA chart, their computers were programmed to its numbering system and changeover to a new numbering system imposed new costs and severe work burdens. Second, many hospitals in both States had problems with compliance due to special reasons associated with their ownership and control. Government hospitals, by law, must follow other prescribed accounting systems; religious orders and for-profit chains often have their own systems that apply nationwide. Third, a great many difficult technical problems had to be resolved, such as whether there should be a common reporting period (given the fact that hospitals often operate according to different fiscal years); choice of and number of accounts required to be reported by small hospitals, etc. And fourth, hospital personnel had to be instructed in the details of how to use the new system as did the accounting and computer firms that serve the hospitals. Finally, an extreme overload of demand on these firms interfered with the service they were able to provide.

After observing this experience, caveats are in order. If sufficient thought is not given to the preparation for transition to a new national

uniform accounting and uniform reporting system for hospitals, difficulties in implementation could very well exacerbate rather than alleviate current problems of data unreliability. We recommended that:

1. Three or four years be allowed to implement a system that requires a new chart of accounts, uniform reporting system, and a uniform budget.

There should be mutual tolerance by hospitals and rate setting bodies of the inevitable difficulties that will be encountered during this period.

2. Adequate funds must be allotted for training programs directed at hospital controllers, accountants and department heads.

Special training in how to use the new reporting system is essential to ensure accurate data entries. This requires staffing that is adequate both in numbers and skills and development of manuals and programmed teaching aids.

3. In the first year of the system's implementation (and perhaps always for primary care hospitals) reporting of only the key elements comprising the framework of the data set should be required.

This will avoid data overload on all parties. More detail about each component can be phased in year by year as experience of need dictates.

However, the full report form, the desired end result, should be available to hospitals at the outset to facilitate the adjustment process. While the rate setting body should be able to require more detail about particular components from individual hospitals at any time, it must recognize that special data demands add to hospital costs.

4. An in-depth study should be conducted to evaluate differences in quality of the data now reported by hospitals in Washington and California related to the manner in which the new accounting and reporting systems were introduced and the data used.

Since the systems are virtually identical in the States that adopted them, but the methods of their introduction were quite different, the conditions of a natural experiment were present. Analysis of results should guide plans for transition to a new national system.

Auditing

There are many problems with the completeness and accuracy with which hospital statistics are reported. These stem in part from inadequate resources for auditing. Most State rate setting programs are severely restricted in funds for audit compared to recognized need. Some do not even have the capacity for systematic desk reviews of the cost/budget reports their hospitals submit. Blue Cross programs appear to fare somewhat better. With present limited funds, attention is usually focused exclusively on the accuracy of the financial reporting and, for Medicare cost reports, on those statistics that figure importantly in cost finding calculations.

At the beginning of a new national rate setting program, very extensive auditing is called for, since the first year's data will become the historical base from which all future rate projections will be made. If a new system of uniform accounting and uniform reporting is promulgated, initial confusion and misunderstandings are bound to lead to high error rates. If

the data to be generated are to be of the quality to permit valid analysis by rate reviewers, frequent direct contacts with hospital personnel are essential to ensure that transactions are being properly recorded at the source and that the principles and practices of the system are understood and followed.

Recommendations for auditing follow:

1. *Data reported from hospitals should be subject to complete external audit during the first three years of the program. Later, limited scope or sample audits may suffice, as with the IRS.*

Inaccuracies are to be expected in any new system of reporting. It is important to correct them, as these first reports will become the historical base for all later trend analyses and exception reviews.

2. *Audit of hospital statistics and of a hospital's internal reporting processes is fully as necessary as audit of its dollar income and expenditures.*

3. *There should be a single external audit to serve the needs of rate setters and all third-party payers. A single audit saves money, time and effort.*

4. *The auditors' reports should themselves be subject to audit, and the results made public.*

5. *Federal guidelines should clearly specify the auditing functions and the frequency and character of audits.*

In summary, if the cost data reported by hospitals is to be used for detailed comparative analysis in rate setting, or by planning agencies, considerable effort will be needed to upgrade the reliability of the reported data. As envisioned in section 1533 (d), uniform accounting and reporting systems must provide the foundation. Transition to such systems by the Nation's diverse hospitals will, however, be a difficult process, requiring sensitive management. Intensive auditing will be required during the first few years to ensure the completeness and accuracy of the reporting. If sufficient attention and resources are not devoted to these undertakings, it is quite possible that the quality of the resulting data may be no more satisfactory than it is at present.

Even if the reported hospital cost data were to meet all necessary standards of quality, however, it will not be available to other than the primary rate-setting users unless specific plans are made in advance for its routine access and distribution. The next section of this paper proposes a means to ensure its distribution.

IV. A Proposal for a Uniform Hospital Cost Data Set

The collection of data from and about hospitals is in itself a not inconsiderable charge against the health care dollar. Striving for more cost-effective use of information resources is as important as striving for cost effectiveness in any other component of health spending.

We have already noted the economies to be achieved by better interchange of information between planning and rate setting agencies in the interest of reducing duplicate collections. The savings that might be accomplished by rate setting programs and third party payers cooperat-

ing in joint data collection efforts, though sizable, are probably miniscule compared to those that could be effected if policymakers, health program planners and all health regulatory agencies at Federal and State levels of government had timely access to the information they need about hospital costs. Today's widespread concern for getting the best value for the health dollar has generated a corresponding demand for cost impact and cost benefit analyses to inform both the drafting of new legislation and the carrying out of activities under the new planning law. Yet very little timely data on hospital costs are now available from which to derive such analyses. In addition, the expertise with which to use hospital cost data, especially at the State level, is in short supply.

Providing a mechanism to meet such needs should be an essential element in planning an information system to support a national rate setting program. The minimum set of hospital cost data we recommend be abstracted from each hospital's annual cost/budget report (for purposes of program monitoring) could be organized and disseminated in a manner that would also serve these wider needs of health policymakers, at very little additional cost.

The enterprise would require an orderly means for identifying the particular data items to constitute a minimum uniform hospital cost data set; a procedure for timely abstraction and processing of the items from hospitals' annual rate setting report submissions; routing of the data to agencies responsible for the analysis and dissemination of information; and technical assistance programs for cost data users. The principal costs entailed would be for analysis and dissemination of the information, and for technical assistance.

The basic minimum uniform hospital cost data set, designed to serve multiple users, would be spun off from the hospitals' annual cost/budget submissions for rate setting. The agency with prime interest in the quality and use of items abstracted for rate setting program monitoring, presumably the Social Security Administration, should be responsible for the supervision of the abstracting and processing. However, it would be unreasonable to expect SSA or any other operating agency to assume the burden of distributing UHCDS data to the other potential users. A solution would be to have intermediaries abstract and process the items and send tapes both to SSA for its own purposes and to the National Center for Health Statistics for analysis and dissemination of information to other users.

For planners' purposes the timeliness of the UHCDS data is much more important than its complete dollar/statistic accuracy. Thus, the abstracting by the intermediary or State agency should be done at the point immediately following receipt and desk audit of the hospitals' cost/budget packages, preceding full audit.

In the design of minimum data sets to serve the varied purposes of many users, questions surrounding the proper identification of the particular items to be included become crucial. The data priorities of health planners, quality assurance agencies, and non-governmental users might be quite different from those of SSA. The more closely the

various potential users are involved in selecting the items to be included in the UHCDS, the more likely it is to accomplish their purposes. Thus, although SSA must have final say in the design, and might usefully impose a limit to the total number of items that it could feasibly be responsible for processing, a broad spectrum of users need to be systematically consulted. These should include staff from the several other bureaus and divisions of the Department of Health, Education, and Welfare that would require some or all of the data for policy analysis and program evaluation, staff from the major Congressional committees dealing with health affairs, representatives of the American Hospital Association, the Hospital Financial Management Association, Blue Cross Association and other national associations with defined interests in health care cost analysis. Representatives of State governments, regulatory and planning agencies and Health Systems Agencies should also be invited to participate.

Once the UHCDS is constructed and implemented, the National Center for Health Statistics should assume responsibility for making the data and/or its analyses available to the various user agencies and organizations, either directly or through the Cooperative Health Statistics System, provided that it could be given the resources necessary to carry out such new responsibilities. In any event, at a minimum, State agencies and HSAs should have access to tapes that contain abstracted data about the hospitals in their jurisdictions. More desirably, they should also be furnished with timely analyses of these data in a set of standard reports designed to furnish the types of information they most frequently require. Again, their specific needs should be ascertained both before such reports are designed, and regularly thereafter so that revisions can be made in the light of their changing requirements.

Since cost information has hitherto not been accessible to planners, they have little experience in analysis and interpretation. If planners and certificate-of-need reviewers at the State and HSA levels are to derive the maximum benefit from the newly available abstracts and the reports flowing from them, special technical assistance programs should be developed for them under the general leadership of the NCHS and SSA.

Pending the development and implementation of a hospital cost data set, the current moves we have noted towards more active data sharing among different regulatory and planning agencies at both State and Federal levels should be encouraged in every possible way. Where State statistical centers are in existence, they should be helped to take a more active role in facilitating the dissemination of hospital cost data and assisting in the data's interpretation. Where this resource is not yet available, working agreements between rate setting programs, certificate-of-need bodies, and HSAs should promote an increasing appreciation of the various ways such data can be put to use in their joint efforts to improve the cost effectiveness of hospital and other health services.

Recommendations for a uniform hospital cost data set follow:

1. *The purpose of a uniform hospital cost data set is to inform national*

health policy and to serve information needs of health regulatory agencies and health programs at both the national and state levels.

Thus, representatives of the major potential users of the UHCDS at Federal and State levels should have an important voice in its development. However, the Social Security Administration, if it is to administer the national rate setting program, or to monitor rate setting programs, must have the final authority for specifying the set.

2. Responsibility for the abstracting, processing and quality of the data should be vested in SSA.

However, to promote timely generation of UHCDS data, abstracting and processing should be conducted at regional or State levels by States or intermediaries. This should be done immediately after desk review of the full reports.

3. High priority should be assigned to abstracting and processing in order to promote timely access to the data.

4. The rate setting enabling law and subsequent Federal guidelines should contain provisions promoting the dissemination and use of UHCDS data.

Tapes should be provided to SSA for its own uses, and to the National Center for Health Statistics for analysis and dissemination of information to the other users. Where State statistical centers exist under the Cooperative Health Statistics System, they should receive UHCDS tapes.

5. Technical assistance programs should be developed under the general leadership of the National Center for Health Statistics designed to help State-level users such as certificates-of-need agencies and HSAs to derive maximum benefit from the availability of the cost data.

Where State statistical centers are in operation, they should assume responsibility for promoting wider access to UHCDS data and analyses.

6. As a long range goal, NCHS and local State statistical centers should develop the capability of demonstrating to State rate setting bodies and health planners and others the relation of cost, utilization, and hospital resource data to population data so as to show how the health system serves the people, and at what cost.

Conclusion

Coordinated policies between reimbursing, health planning, certificate-of-need, utilization review and quality monitoring organizations are essential if the goals of section 1502 are to be realized. An information bridge between health planning bodies and hospital rate setting programs offers one approach that might facilitate implementation. In any event, the information collected annually by rate setting bodies from the hospitals in defined geographic areas should prove a valuable resource to planners, at minimal cost. The quality of hospital cost and budget reporting is likely to be upgraded as a result of the provisions of section 1533 (d) provided that the manner in which uniform accounting and reporting systems are introduced takes suitable cognizance of the many pitfalls surrounding implementation, and that adequate resources are devoted to follow-up audits. To insure access to the resulting

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Information, plans to spin off a limited, uniform cost data set from rate setting reports should be set in motion early, and mechanisms for analysis and distribution of information provided through the National Center for Health Statistics. Planners will, however, require considerable assistance in learning to use and interpret cost data, to which they have had all too little access in the past.

ABSTRACT: Recommendations are presented for developing stronger and more effective programs of health education in health care institutions, schools, occupational settings, and by community and national groups. National standards are proposed.

"Sec. 1502. The Congress finds that the following deserve priority consideration in the formulation of national health planning goals and in the development and operation of Federal, State, and area health planning and resources development programs: . . . (10) The development of effective methods of educating the general public concerning proper personal (including preventive) health care and methods for effective use of available health services."

Section 1502 (10)

Health Education and Public Law 93-641

*Horace G. Ogden**

Health agencies and institutions seldom plan or conduct health education programs in cooperation with each other. Instead, they tend to carry out only those activities which are within scope of their mission. Their public relations, fund-raising and agency "identity" objectives are frequently interwoven with educational efforts, making inter-agency cooperation difficult.

When health education is offered, it may be planned poorly or not at all. One serious weakness is selection of methods with little regard for their relation to program objectives, the interests and needs of target population groups, or factors which will influence action. Methods repeatedly become ends in themselves.

Completion of a film, exhibit or conference is many times equated with success, whether or not it has any effect on achieving program objectives. Often only information-giving methods are used, such as a leaflet, poster or TV spot, even though a combination of methods is usually needed tailored to fit the particular situation.

Agencies are constrained in their health education activities by budget, manpower and other limitations. If an agency views health education as an incidental by-product rather than as an important responsibility, it may be inclined to reduce or eliminate it if funds are scarce.

In 1974 a Bureau of Health Education was established at the Center for Disease Control to be a focal point for Federal activities in the field. In 1975, one of the eight task forces of the National Conference on Preventive Medicine was devoted to consumer health education. The program descriptions and summaries that follow draw heavily from the report of this Task Force,¹ supplemented by the 1973 report of the President's Committee on Health Education,² a survey report on consumer health education programs conducted for the U.S. Department of Health, Education, and Welfare by the Arthur D. Little Company,³ and information gathered by the Bureau.

The definition of "consumer health education" adopted by the Task Force will provide a useful introduction to this survey of health education

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1. Preventive Medicine, U.S.A. Prodist Press, New York, 1976.

2. President's Committee on Health Education, Report. U.S. Department of Health, Education, and Welfare, Washington, D.C., 1973.

3. A survey of consumer health education programs. Final report. Arthur D. Little, Inc. Bureau of Health Education, Atlanta, Ga., January 1976.

activities. The Task Force described the term as embracing a set of activities which:

1. Inform people about health, illness, disability, and ways in which they can improve and protect their own health, including more efficient use of the delivery system.
2. Motivate people to want to change to more healthful practices.
3. Help them learn the necessary skills to adopt and maintain healthful practices and lifestyles.
4. Foster teaching and communications skills in all those engaged in teaching consumers about health.
5. Advocate changes in the environment that facilitate healthful conditions and healthful behavior.
6. Add to knowledge via research and evaluation concerning the most effective ways of achieving the above objections.

I. Patient Education in Health and Medical Care Institutions

Patient education is usually conducted within the confines of a clinic, hospital, or some other part of the health care delivery system. It may be conducted on a one-to-one basis, or through organized classes and courses for patient groups. Several of the larger pharmaceutical houses and appliance manufacturers have contributed to the development of and production of films, tapes, cassettes, slides, anatomical models, teaching texts, and other audio-visuals. Some are very good; most are expensive; relatively few have been carefully evaluated.

The American Hospital Association is gathering and analyzing data on patient education programs relating to certain diseases, health situations, types of hospital settings, and populations served. Approximately 5,700 non-governmental hospitals are included in the study.

A.D. Little surveyed ten Health Maintenance Organizations, finding that health education activities were either in existence in most of them or planned. All of the existing programs stressed the importance of education in how to use the HMO; other subjects were obesity and weight control, prenatal care, hypertension, diabetes and smoking.

The Task Force found that despite the apparent high quality of some of the hospital, HMO and other patient education programs, the field in general lacks defined and acceptable goals and methodologies both for education and for evaluation, and reliable sources for long-term funding.

A major issue currently under active study is the question of reimbursement by third-party payers for patient education in various settings. Insurance carriers have issued policy statements favorable to this and in some instances the costs of patient education are being reimbursed as a part of overall daily hospital costs. Needed are specific criteria on which payment should be based which are acceptable to providers and insurers. The newly formed National Center for Health

Education in the private sector is addressing this problem as one of its first priorities.

II. School Health Education

The school provides a setting in which the total health of the child should be of priority concern. However, there is little evidence that the opportunities inherent in school health education are being taken advantage of. The President's Committee found that school health education in most primary and secondary schools is either not provided at all or is tacked onto other subject matter such as physical education or biology and assigned to teachers whose main interests and qualifications lie elsewhere.

Although many States have enacted legislation on school health education, funds have frequently not been appropriated to implement the legislation. And, according to the President's Committee, legislation in many States impedes development of effective school health programs. Some laws regarding what can be taught have not been changed since the late 1800s.

In recent years, content orientation is beginning to change; healthful behavior is treated as a positive force in the students' lives. This is reflected at the secondary level by courses in family living and at the elementary level by the integration of health education into reading and science classes and by special health education programs.

The School Health Curriculum Project, (supported by the Bureau of Health Education, the American Cancer Society, the American Heart Association, the American Lung Association and others) focuses on elementary and junior high schools. It includes intensive teacher training and extensive classroom teaching resources. Since its inception about ten years ago, it has spread to more than 300 school districts in 30 States.

The National Congress of Parents and Teachers, acting through its State and local counterparts, is becoming more active in school health education. Several State and local projects, using different approaches and various methods, are attempting to increase community understanding and support for more effective programs.

In general, school health education programs are faced with three major constraints: a tradition of low visibility and low priority, a narrow definition of the appropriate content and jurisdiction for health education efforts, and according to many observers, a shortage of adequately prepared school educators.

III. Occupational Health Education

The health of employees directly affects the employer's insurance and medical costs, not to mention his profits. For health education purposes, the workplace should provide a good setting to reach many adults. Occupational health education can deal with safety and environmental health hazards and specific disease categories as well as more general concerns.

The Federal Occupational Safety and Health Administration and many

unions and companies have initiated education programs including a considerable number concerned with work-related problems such as alcohol and drug abuse. Some employers offer periodic voluntary physical examinations for employees, occasional films or videotape presentations and discussions during lunch hour, and frequent health articles in company publications.

As one example of an active program, the United Mine Workers Union, which administers its own prepaid health insurance plan, has employed full-time health educators in several regions and conducts programs in preventive care. Within the Federal Government, the central office of the Social Security Administration provided short educational programs on breast self-examination to more than 10,000 female employees in cooperation with the American Cancer Society. On the basis of its findings, it will determine whether similar programs should be provided for female employees at all field offices.

Although many other general health maintenance and educational activities are currently taking place, business, industry and labor are not yet significantly involved in overall programs that could contribute to sound off-job safety and health practices which could also benefit on-job attendance and productivity.

IV. Community Health Education

Large segments of the public are lacking in basic knowledge about the enhancement of personal and family health, the prevention of disease and methods for effective use of available health services. Health education efforts are particularly needed in inner city and rural communities, especially in economically and educationally depressed areas. Simmons has reviewed this in "Making Education Work."⁴

In general, community health education programs tend to be directed toward defined target populations, identified on the basis of geographic, socio-economic, ethnic, age, or other factors. They may be sponsored by health departments, hospitals, other public or private health or welfare agencies, or community groups concerned with health.

Targeted community programs may start with screening for hypertension, breast cancer, diabetes, tuberculosis, sickle cell anemia, etc. In many communities there are periodic "health fairs" that feature information materials, films, exhibits and some screening activity.

One of the major problems in screening programs is the difficulty of obtaining follow-up information. Forty thousand employed individuals potentially at risk for heart problems were screened by the Chicago chapter of the American Heart Association in 1967; over half scored too high on at least one of three risk factors. The Association sent up to three letters to encourage a professional visit, but the follow-up rate was poor. Somewhat better success is now being achieved by the national high blood pressure education program of the National Heart, Lung, and Blood Institute.

4. J. Simmons, (ed.): Making health education work. Am J of Public Health, Supplement. October 1975.

An information "hot line" is another approach to community health education, particularly in relation to drug and venereal disease problems and emotional difficulties. A telephone dial access program is now operating in more than 60 cities in which individuals use a toll-free service to hear taped, authoritative health information on one or more health conditions or problems of concern to them. Tapes are available on a wide range of subjects. Unfortunately, the evidence of follow-up is scarce.

In many low-income communities, the usual difficulties confronting health education are compounded by cultural and other factors that interfere with effective communication. In New Mexico, the State Health Education Coalition is testing various health education approaches in barrios and in Indian and rural communities. In Los Angeles, Detroit, Brooklyn, Trenton and elsewhere, programs are in progress or under development using health education aids and outreach workers from the community.

A.D. Little surveyed three State and nine county health departments; it found many educational efforts on many different topics, often with five to ten or more different programs. Although some unique efforts were discovered and intensive follow-up was frequently reported, many of the programs were at a low point in terms of financing and ability to attract well-qualified personnel.

V. National Health and Health-Related Agency Programs

Most of the approximately 70 national health and health-related agencies and organizations affiliated with the National Health Council are doing some health education. The programs are usually directed to the general public. Their aim is broad public health education within the agency's specific areas of concern. In cases where actual instructional programs are conducted, sponsorship and instructional guidelines are generally national rather than local. The quantity, quality, and effectiveness of agency programs vary greatly.

Probably the best known efforts are those of the American Cancer Society, whose awareness programs on cancer's seven danger signals are widely distributed, and the American Heart Association, which translated its nutritional concerns into a best-selling cookbook. The National Foundation-March of Dimes "Family Health Record" form, distributed in many States, can be a useful contribution to increasing family health knowledge and responsibility. The American Lung Association has been particularly active in anti-cigarette smoking programs in recent years.

Major contributions to health education of the public are also made by many organizations that may not identify themselves as a health agency. The Planned Parenthood Federation, through its State and local affiliates, has pioneered in the area of family planning. The National Safety Council is the acknowledged leader in accident prevention programs. The Red Cross is synonymous with lifesaving and first aid.

Many local affiliates of national health agencies cooperate in one or more aspects of the School Health Curriculum Project. Many national

agencies and their local counterparts concerned with smoking have banded together under the auspices of the National Inter-Agency Council on Smoking and Health.

VI. Mass Media and Health Education

A 1971 Harris poll, commissioned by the Blue Cross Association, found that 29 per cent of the American people reported that they receive most of their health and medical information from TV advertising, 28 per cent from newspaper medical columns, 26 per cent from magazines, and 25 percent from TV medical news. The media, as sources of information, were exceeded only by physicians, who were named by 51 per cent of the respondents.⁵

A 1970 survey of one commercial TV network channel in Detroit by investigators from Wayne State University School of Medicine reported that only 30 per cent of the health time offered useful information, while 70 per cent was inaccurate or misleading or both.⁶

In a study on the impact of TV health messages (mostly commercials) on fifth and sixth grade children, C.E. and M.A. Lewis found that 70 per cent were "believed," the proportion rising from 61 per cent in a mostly white university experimental school to 86 per cent in a school where the children came from disadvantaged backgrounds.⁷ Forty-seven per cent were reported as "true believers," accepting all messages as true.

There are two frequent criticisms of the media, particularly television as related to children and youth: overemphasis on violence and other forms of behavior that may contribute to self-destructive lifestyles, and inculcation of an attitude of passive acceptance that is at variance with the sense of individual responsibility which is a major goal of health education.

There is increasing evidence that TV's positive potential is receiving more attention. The National Association of Broadcasters has begun to adopt advertising codes for children's TV and, in 1975, adopted the concept of a two-hour family viewing time during which gratuitous violence and other material deemed inappropriate for children would not be shown.

TV's ability to produce worthwhile health information was demonstrated by the anti-smoking advertisements developed prior to the total ban on smoking ads. The number of good medical documentaries has increased markedly in the last few years. Further, a good deal of solid health information is conveyed through regular news broadcasts, feature programs and even some of the shows that are produced primarily for entertainment.

The Cardiovascular Center of the University of Nebraska Medical College has produced a 26-program educational television series on cardiovascular disease. Financed by State funds, the program drew an

5. Blue Cross Association, Chicago, Illinois. Press Release, December 29, 1971.

6. Smith, F. A., G. Trivax, D. Zuehlke, et al.: Health information during a week of television. *N Engl J Med.* March 9, 1972, pp. 516-520.

7. Lewis, C. E. and M. A. Lewis: The impact of television commercials on health related beliefs and behaviors of children. *Pediatrics*, Vol. 53, March 1974, pp. 431-435.

average viewing audience of 20,000 persons in a largely rural State. Each segment was 30 minutes in length, divided equally between a factual presentation and a period for answering questions called in by the audience.

Standards for Health Education and Promotion

In the summer of 1975, the Bureau of Health Education convened a three-day conference of health educators and health planning leaders to develop standards for use by health planning agencies and in helping develop national health planning guidelines. With some later modifications, these are presented below.

A. Standards for Educating the Individual in Healthful Behavior

(1) An organizational mechanism shall exist in the Health Services Area that will: Define the needs for health education and promotion programs, inventory resources and services available, and design a plan to develop, maintain and evaluate comprehensive health education and promotion programs in accordance with consumer needs and interests.

(2) A comprehensive, coordinated and identifiable health education and promotion program component, as well as explicit health education and promotion segments of categorical programs shall be included in health or education plans of local and state health departments, school districts, the Health Systems Agency, the State health planning and resources development agency, and Federal and other appropriate health agencies at area and state levels.

So that users and providers of health education and promotion services may have a common understanding of the goals, priorities, scope and cost of health education and promotion services, health education and promotion plans should be set forth in writing and incorporated into the overall plans of the agencies identified above.

(3) Health education and promotion services shall be equitably distributed throughout the Health Services Area, and shall be accessible to all communities within the area, including traditionally underserved populations such as those located in rural or economically depressed areas.

(4) Appropriate technical assistance and consultation services shall be available to assist in planning, implementation and evaluation of health education and promotion programs. This shall be provided by Health Systems Agency, the State health planning and resources development agency, State health and education departments, centers for health planning, agencies of the U.S. Department of Health, Education, and Welfare and other consultative sources.

(5) Health education and promotion programs, under full-time professional direction and having adequate resources (personnel, materiel, funds and facilities) shall be located in: Health departments and Federally funded health agencies serving 100,000 or more population, school districts having 10,000 or more students, and Federal agencies having an identifiable employee health program.

Professional direction here and under standard 10 below is interpreted to mean that the individual who directs the program has received a master's degree in public health education, or a master's degree in a related field (e.g., nursing, social work) with training in health and in educational concepts and methodologies, and has had successful experience in providing health education services.

In some instances, it may not be possible to secure the services of a master's level health educator. In such cases, an individual with a bachelor's level degree in public health education is acceptable, provided he or she has demonstrated successful health education experience, and has established a consultative arrangement with a health educator qualified by the master's degree and successful health education experience.

(6) Health education and promotion staff shall include, to the maximum extent feasible, qualified persons who reflect the ethnic and racial backgrounds of the area; employers of health education and promotion staff shall follow affirmative action procedures for recruitment, training, and promotion.

(7) Appropriate educational institutions and other resources, such as funding sources, shall be encouraged to develop a hierarchy of preparation for health educators, including: Outreach workers, associate, bachelor's, master's and doctoral level personnel.

(8) Education resources preparing students for careers in health administration, teaching, community development and social work, as well as the medical, health and allied health professions, shall be encouraged to require at least one course in educational concepts and methodologies; continuing education and training courses in this subject shall also be encouraged.

B. Standards for Education Within the Health Care System

(9) Identifiable patient and family health education and promotion programs shall be available in hospitals having 150 or more beds, health maintenance organizations with 25,000 or more enrollees and Federally-funded health care programs serving more than 5,000 persons.

(10) Patient and family education programs in health care facilities described under Standard 9 shall be under full-time professional direction and have adequate resources (personnel, materiel, funds and facilities).

(11) Facilities serving smaller numbers of persons than indicated in Standard 9 shall be encouraged to secure part-time professional health education specialists or other qualified personnel, or shall be urged to share the services of such individuals whenever feasible.

(12) Patient and family education resources (personnel, materiel, funds and facilities) shall be distributed within the Health Services Area so that they are available to patients and their families receiving services at a health care facility identified under Standard 9 and Standard 11.

(13) Appropriate technical assistance and consultation services shall be made available to assist in planning, implementation and evaluation of 150

patient and family health education and promotion programs, with the help of the Health Systems Agency, the State health planning and resources development agency, State health departments, centers for health planning, HEW and other consultative sources.

(14) Identifiable patient and family health education and promotion services shall be reimbursable by third-party payers.

(15) Agencies and organizations that administer Federally-funded health care programs shall effectively inform persons eligible for services of their eligibility, and providers eligible for reimbursement of that fact. These efforts shall be evaluated periodically.

(16) An organized patient advocacy system shall be established in the Health Services Area to assist in interpreting the nature and scope of available services to potential users, hear the grievances of users of these services concerning their quality and represent the consumer in making suggestions about improving such services.

(17) Educational institutions preparing students for careers in medicine, nursing, allied health professions and social work shall be encouraged to provide pre-service, continuing education and training in patient and family health education and promotion for all direct providers of personal health care.

C. Standards for Education for Citizen Participation

(18) An organizational mechanism shall exist within the Health Services Area that will: Determine the availability, interests, and skills of citizens who are concerned with the successful resolution of health problems and issues at local, State and national levels; find ways of including these citizens in the Agency's work; make their availability known to health agencies seeking citizen participation; and systematically encourage other citizens to become involved in various aspects of health at local, State and national levels.

(19) Health Systems Agencies and other agencies involved in health education and promotion planning, resources development and services operation, shall use indirect as well as direct means of obtaining significant citizen input and participation in programs and services.

There are many tested methods for obtaining citizen input and participation in health programs. For example, health agencies and institutions may consider opinion surveys of policies and programs, employ indigenous outreach workers who serve as patient advocates, and recruit personnel who reflect the major ethnic and racial groups of the population.

(20) Appropriate technical assistance and consultation services shall be made available to assist in planning, implementation and evaluation of citizen participation activities, with the help of the Health Systems Agency, the State health planning and resources development agency, HEW and other consultative sources.

(21) The Health Systems Agency and its State and national counterparts shall provide or arrange for ongoing orientation and training of the agency's governing body, plan development committees, task forces and

other appropriate citizen groups. Such training shall include the need for and models of health programs, decision-making and policy development, as well as citizen opportunities, roles, and responsibilities in the formulation and assessment of health policies and programs; other health agencies shall be encouraged to provide similar orientation and training for their citizen participants.

(22) Educational institutions shall be encouraged to provide continuing education and training for health professionals on ways and means of increasing informed citizen participation in formulating and assessing health policies and programs.